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# THE IMPACT OF A VIDEO INTERVENTION TO IMPROVE PATIENT PARTICIPATION IN THE HOSPITAL OUTPATIENT CONSULTATION

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## ABSTRACT

The aim of this study was to develop a video intervention and to determine whether it could be successful in increasing patient participation in medical interviews. The efficacy of the intervention was evaluated by examining the effects of the video on the process of communication and on patient outcomes. The secondary aims of the study were to investigate the role of individual patient differences and the doctor on the consultation.

This study was experimental, with patients allocated to one of three groups, experimental, placebo control and control. The experimental group watched a video designed to improve their communication with the doctor, the placebo group saw a neutral video and the control group no video. All patients completed questionnaires assessing anxiety, health related cognitions and health status immediately prior to their consultation. The consultations were audiotaped and subsequently analysed using the Verbal Response Mode coding system (Stiles, 1992). Post-consultation, further questionnaires were completed to assess anxiety, satisfaction, perceived control over recovery and ability to communicate.

Data from 206 participants were analysed. The results demonstrated that the video intervention did not result in significant increases in patient participation or improved outcomes. Individual patient differences accounted for a small proportion of the variance in patient participation and satisfaction. Significant differences were found in patient participation and satisfaction according to the doctor seen. Individual patient differences and the doctor seen predicted the patients' verbal contribution to the consultation and patient satisfaction. A significant interaction was found between the

experimental group and doctor on the measure of patient satisfaction, in that experimental group patients of one doctor were more satisfied than controls.

The findings suggested that targeting an intervention exclusively at patients was insufficient to produce improvements in participation and outcomes, except where circumstances within the consultation were favourable to patient participation. The evidence indicated that doctors play an influential role in the consultation and interventions may be more successful if directed at doctors and patients simultaneously.

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# CHAPTER 1

# LITERATURE REVIEW – DOCTOR-PATIENT COMMUNICATION, SATISFACTION AND PATIENT PARTICIPATION.

## 1.1. Foreword

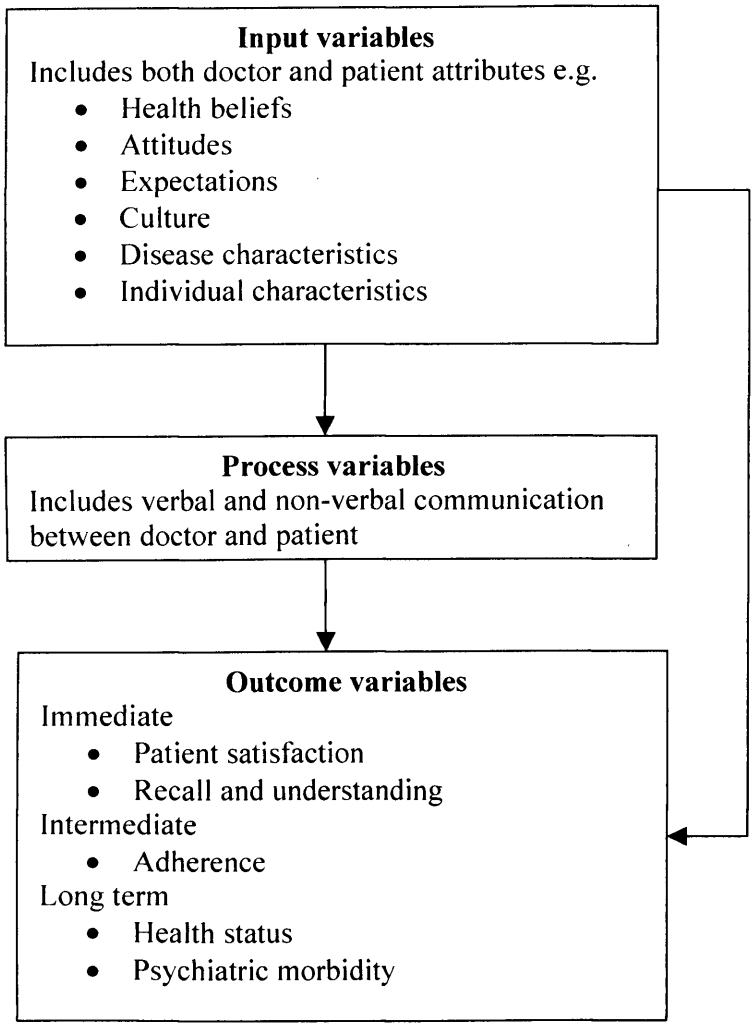
In clinical settings, the medical interview is the most commonly performed event (Epstein, Campbell, Cohen-Cole, McWhinney & Smilkstein, 1993). Communication is central to the success of the interview (DiMatteo, 1994). From the doctor's perspective, information is vital for making diagnoses and prescribing treatment. From the patient's perspective, receipt of information promotes an understanding of health status and of health related issues, which in turn may reduce uncertainty and anxiety and lead to improved health (Waitzkin, 1985; Roter, Hall & Katz, 1987). Studies of doctor-patient communication have demonstrated clear links between the quality of communication and patient satisfaction, adherence and clinical outcomes (Hall, Roter & Katz, 1988; Roter, Hall & Katz, 1988; Stewart, 1995). However, the doctor-patient relationship is far from straightforward, since the relationship is unequal, may be non-voluntary, concerns important issues, and consequently, is often emotionally charged (Chaitchick, Kreitler, Shaked, Schwartz & Rosin, 1992).

## 1.2. A theoretical model of the medical consultation

Medical consultations are complex events and a theoretical model of the medical consultation can help to explain the association among three types of variables that have an effect on the consultation: input, process, and outcome measures. Input variables include both doctor and patient attributes, such as the patients' level of understanding about a medical condition, beliefs about health, treatment, or the cause of an illness as well as contextual factors. Process variables include the verbal and non-verbal forms of

communication between the doctor and the patient, such as body language. Outcome variables can be immediate, intermediate, and long-term. Immediate outcomes include patient satisfaction with care and memory of the doctor's instructions or recommendations. Intermediate outcome variables include patient adherence to the medical regimen and length of stay in hospital after surgical operations, and long-term outcomes include changes in life-style or health status (Pendleton, 1983; Rutter, 1996). This model is explicit in directing research attention towards the relationship among input, process, and outcome variables (Pendleton, 1983) (See figure 1 on next page). Research suggests that the way in which doctors communicate with their patients has a significant effect upon outcomes, for example, satisfaction, recall and understanding of medical information, adherence to treatment, physical functioning and health status, coping with disease and quality of life. (Ong, de Haes, Hoos & Lammes, 1995).

**Figure 1. Schematic model of the medical consultation**




Adapted from Pendleton (1983) and Ong et al. (1995).

## 1.3. DOCTOR-PATIENT COMMUNICATION

### 1.3.1. Introduction

Three specific purposes of communication between doctors and patients have been identified. The first is creating a good interpersonal relationship. Roter and Hall (1992) say 'Talk is the main ingredient in medical care and it is the fundamental instrument by which the doctor-patient relationship is crafted and by which the therapeutic goals are achieved.' The second is the exchange of information between doctors and patients (Inui & Carter, 1985; Roter et al., 1988); this involves both information-giving and

information-seeking. The third is to enable doctors and patients to make decisions about treatment (Beisecker & Beisecker, 1990).

### 1.3.2. The influence of patient characteristics

Input variables such as individual patient characteristics can have an influence on the interaction between patients and doctors. Evidence suggests that doctors provide varying amounts of information to patients with different patient characteristics. For example, patients who are middle-aged, more educated, upper-middle class and who are more seriously ill tend to receive more information from their doctors than patients who do not fall into these categories (Waitzkin, 1985; Pendleton & Bochner, 1980). Doctors have also been found to be more likely to discuss and justify choice of treatments with patients who are university graduates than those who were less well educated (Stewart, 1983). Additionally, it has been found that paediatricians are more likely to discuss medications and treatments, in preference to symptoms, with parents who are highly educated and on higher incomes (Arntson & Philipsborn, 1982). The situation is less clear-cut when considering gender. Some investigators have argued that doctors are less likely to impart information to female patients (Street, 1991), or to male patients (Hooper, Comstock, Goodwin & Goodwin, 1982; Waitzkin, 1985), whereas others have found no differences (Street, 1991).

### 1.3.3. The influence of patients' communication style

The way in which patients communicate with doctors may have an influence on doctors' provision of information. Patients who are more assertive, express more concerns, and ask more questions may acquire more information from doctors than do less verbally active patients. This could account for the finding that patients who are older, more highly educated and of higher socioeconomic status receive more

information because they possess communication styles that elicit information from doctors (Street, 1991).

Three aspects of patients' verbal behaviour have been observed to influence the provision of information. These are question-asking, expressing concerns, and assertive utterances (Street, 1991). Greater amounts of these behaviours are associated with improved post-consultation outcomes, such as patient satisfaction and adherence (Roter & Hall, 1992; Street, 2001). There is some evidence to suggest that doctors do provide more information to patients who ask more rather than fewer questions (Roter, 1984; Greenfield, Kaplan & Ware, 1985; Amir, 1987). However, some doctors may feel uncomfortable with copious question-asking by patients but may feel obliged to give some information in response to the patient's requests (Street, 1991). The expression of concerns and worries by the patient (affective expression) may also encourage the provision of information as the doctor may respond informatively to give reassurance to the patient (Street, 1991). Patients who demonstrate assertiveness, by expressing their thoughts and opinions, provide an environment for doctors to respond informatively to the patient's opinions via debate with the patient over an opinion that has been expressed (Street, 1991). This view was supported in a study that showed doctors were more interpersonally engaged with patients who utilised these verbal behaviours compared to patients who did not (Greenfield et al., 1985).

The effects of patient characteristics and patient communication style on information provision by doctors have largely been considered independently, with the exception of one investigation, which considered both individual patient characteristics including education, age, sex and anxiety, and communicative style including question-asking, affective expressiveness and opinion-giving (Street, 1991). Overall, the results were

consistent with previous findings relating to patients' personal characteristics and communication style. However, the results of this investigation indicated that both patients' personal characteristics and styles of communication play a role in the medical consultation (Street, 1991). More specifically, the results showed that more educated patients were more opinionated and more affectively expressive than were less educated patients, and older patients and males were more opinionated than younger patients and females. These findings were in accordance with those of Stewart (1983) and Beisecker & Beisecker (1990) who found that greater age was associated with an increase in information-seeking behaviours.

### 1.3.4. The influence of doctors on doctor-patient communication

While patient characteristics and patients' communication style seem to have some influence over the extent of information-provision by doctors, differing amounts of information provision may be related to the doctors' attitudes towards patients. The transmission of information from doctor to patient has been found to be related in part to doctors' perceptions of patients' desires for information (Waitzkin, 1984; 1985). Waitzkin found no differences between in patients' socioeconomic status and their desires for information. However, patients of lower socioeconomic status asked fewer questions so doctors assumed that they had little desire for information (Waitzkin, 1984; 1985). Additionally, doctors may vary the amount of information given to patients because of their impressions of a particular patient, for example being likeable or intelligent or because of their subjective judgment about the patient's informational needs and requirements (Stiles, 1989).

Doctors provide services that are both necessary and wanted by patients, this results in the doctor-patient relationship being unbalanced as the doctor possesses the 'legitimate,

referent, and expert power' (Beisecker, 1990). This leads to the argument that the doctor-patient relationship is based on a sense of control that can be found on a continuum between high and low control (Stewart & Roter, 1989). It appears that the difference in control may stem form the patient's limited understanding of medical problems and treatment, heightened uncertainty, doctors' control of medical information, and the institutionalized roles prescribed for the doctor and patient (Hall, Roter & Rand, 1981). In situations where doctor control is high and patient control is low, the doctor will be the dominant party, meaning that the doctor will make decisions in what is perceived to be in the patients best interests (Stewart & Roter, 1989). High doctor control has been described as being similar to 'paternalism' (Roter & Hall, 1992). The paternalistic model assumes that there are shared objective criteria for determining what is best. Consequently, the doctor makes the decision about what is best for the patient with minimal patient input (Emanuel & Emanuel, 1992). This pattern of communication where the doctor has high control is still the most common one in medical practice and is widespread in the NHS (Stewart & Roter, 1989; Coulter, 1999).

## 1.4. PATIENT SATISFACTION

### 1.4.1. Introduction

An increased emphasis on consumer opinion has led to a greater interest in patient satisfaction over the years (Locker & Dunt, 1978). Patient satisfaction with their care is important for two main reasons. Firstly, patient satisfaction is a desirable objective in its own right. Secondly, patient satisfaction is related to outcomes (Ley, 1988), such as adherence to treatment recommendations, recall and understanding of medical information, health status, coping with disease and quality of life (Ong et al., 1995).

### 1.4.2. Patient characteristics and satisfaction

The literature on patient satisfaction in the UK and the USA consistently shows that most patients report high satisfaction with the care they receive (Fitzpatrick & Hopkins, 1983; Locker & Dunt, 1978). The evidence suggests that in the region of 83-97% are highly satisfied (Williams & Calnan, 1991).

Patient satisfaction is considered an immediate outcome of the medical interview (Pendleton, 1983). Different attributes of the patient appear to influence satisfaction. Studies have often considered age, education and gender, but race, social class, occupation and marital status have also been examined. A number of studies have shown that older patients report higher levels of satisfaction with their medical care (Linder-Pelts & Stewart, 1986; Like & Zyzanski, 1987; Williams & Calnan, 1991; Cohen, 1996; Young, Meterko & Desai, 2000). For example, one study found that in a general practice setting, patients who were older, or had fewer psychosocial or chronic disease problems, or had children in the family, were more highly satisfied (Sixma, Spreeuwenberg & van der Pasch, 1998). Conversely, some other studies have not found support for a relationship between greater age and satisfaction (Anderson & Zimmerman, 1993; Murphy-Cullen & Larsen, 1984). In this country, it has been proposed that this positive relationship may be partly due to older patients being able to remember what services were like prior to the formation of the NHS (Carr-Hill, 1992).

Mixed findings have also been reported for the relationship between education and satisfaction. One study found that the level of patient education was the only variable significantly related to patient satisfaction (Anderson & Zimmerman, 1993). Other studies have found no such relationship between patient satisfaction and levels of

education (Murphy-Cullen & Larsen, 1984; Like & Zyzanski, 1987; Williams & Calnan, 1991).

Varied results have also been found between patients' gender and satisfaction. Higher ratings of satisfaction were found among female patients (Like & Zyzanski, 1987), but others found no significant differences in satisfaction according to patients' gender (Murphy-Cullen & Larsen, 1984; Delgado, Lopez-Fernandez & de dios Luna, 1993). In a comparative study of different medical settings, women were found to be slightly less satisfied than men with both general practice and hospital care (Williams & Calnan, 1991).

Several studies considering race and ethnicity of patients have found no relationship to satisfaction (Murphy-Cullen & Larsen, 1984; Like & Zyzanski, 1987; Anderson & Zimmerman, 1993). However, in a more recent study non-white patents reported lower levels of satisfaction than white patients did (Young et al, 2000).

Two studies reported no significant differences in patient satisfaction according to patients' employment status or occupation (Murphy-Cullen & Larsen, 1984; Like & Zyzanski, 1987). Higher levels of patient satisfaction have been reported among lower class patients but this was not related to annual income (Like & Zyzanski, 1987), however, no significant relationship was found between social class and satisfaction in general practice (Williams & Calnan, 1991). Moreover, patients in manual occupations have been shown to be more likely to feel patronised or ignored by doctors (Cohen, 1996).

Despite the claim that certain sociodemographic variables are consistently related to patient satisfaction (Locker & Dunt, 1978; Fitzpatrick & Hopkins, 1983), the evidence does not strongly support this, with mixed findings, particularly for age, education, and gender. Fox & Storms (1981) go as far as to say 'the literature on satisfaction with health care presents contradictory findings about sociodemographic variables.... The situation has grown so chaotic that some writers dismiss [sociodemographic] variables as reliable predictors of satisfaction.'

Similar inconsistencies have been reported between health status and satisfaction. In some studies better health status was significantly associated with higher satisfaction scores (Cohen, 1996; Young et al., 2000), but in others no significant correlations were found either in general practice or hospital settings (Williams & Calnan, 1991). There were no significant relationships found between satisfaction and type of presenting problem, underlying illness concern or worry (Like & Zyzanski, 1987).

Psychological distress in patients has also been found to correlate negatively with three satisfaction measures: humanness, competence and general quality of the service provided (Greenly, Young & Schoenherr, 1982). Patients with a psychiatric diagnosis have been shown to be less satisfied with their overall care than patients without psychiatric disorders (Hermann, Ettner & Dorwart, 1998; Alexius, Berg & Åberg-Wistedt, 2000). Conversely, another study found no differences in satisfaction rates between patients with specific categories of mental disorders (major or minor depression, anxiety disorders etc.) or with greater number of co-morbid mental disorders (Jackson, Chamberlin & Kroenke, 2001).

Even the simple issue of making an appointment with a GP can produce contradictory findings regarding satisfaction. Sixma et al. (1998) found greater patient satisfaction in general practice when it was possible to make an appointment on the same day. Another study demonstrated that very little of the variation in general satisfaction with appointment getting was explained by sociodemographic variables, except being older and paying for the visit (Linder-Pelts & Stewart, 1986).

These findings emphasise the complexity of patient satisfaction, where it is apparently dependent on a number of factors including individual patient characteristics, health status and contextual factors. However, patient satisfaction may also be dependent on what occurs in a particular encounter.

### 1.4.3. Patient expectations and satisfaction with the consultation

Patients' satisfaction with their consultation appears to be closely related to their initial expectations of the consultation and their goals for the consultation. Uhlmann, Inui & Carter, (1984) described the distinction between what patients expect and what they want from a consultation:

'Patient requests, expectations, desires, goals, preferences, and priorities are terms that have appeared in the medical and health services literature in recent years. These are closely related terms with subtle but important differences. Patients' expectations and desires pertain to two distinct perceptual dimensions: expectancy and value. Expectations primarily reflect an expectancy, a perception that the occurrence of a given event is likely. Thus patient expectations are anticipations that given events are likely to occur during or as a result of medical care. Patient desires are wishes regarding medical care and in contrast to expectations, primarily reflect a valuation, a perception that a given event is wanted. An event may be desired but not expected (e.g., 'I want but do not expect, my disease to be cured') or conversely, expected but not desired (e.g., 'I expect to receive, but do not desire a painful injection'). Thus, events expected by patients are not necessarily desired by them and vice versa. Indeed, the occurrence of an expected but undesired event would probably be unfavourably perceived by the patient. In some instances a patient may both desire and expect an event (e.g., 'I want and expect to receive a medication for my condition').'

Both in the UK and in the USA the evidence suggests that the vast majority of patients have some expectations of consultations (Williams, Weinman, Dale & Newman, 1995; Jackson et al., 2001; Kravitz, Bell, Azari, Krupat, Kelly-Reif & Thom, 2002). Unfulfilled expectations in one study were recorded in 18.2% of patients. These were found to be related to an number of factors including lack of physical examination (30%) and diagnostic testing (28%), failure of the doctor to ask about particular medical or lifestyle factors (26%), lack of preparation for the consultation (23%), referral (26%), prescriptions (19%) and doctor-patient communication (15%) (Kravitz, Callahan, Paterniti, Antonious, Dunhan & Lewis, 1996). Patients with fewer numbers of their expectations perceived as being met reported significantly lower rates of satisfaction (Williams et al., 1995). Having unmet expectations, more severe symptoms, worse functional status or being considered 'difficult' by the doctor also decreased satisfaction (Jackson et al., 2001). However, not all studies have shown that expectations were related to satisfaction. One recent study showed that unmet expectations were not related to satisfaction even among the subset of patients with the highest number of unmet expectations. In addition, patients with unmet expectations for each specific service (test, referral or new medication) did not differ in visit specific satisfaction or satisfaction with doctors interpersonal skills (Peck, Asch, Goold, Roter, Ubel, McIntyre, Abbott, Hoff, Koropchak & Tulsky, 2001).

Several studies have identified that above all else most patients want an explanation of the problem, an explanation of the cause of the problem and medical information (Williams et al., 1995; Jackson et al., 2001; Kravitz et al., 2002). Other frequently cited requests were for physical examinations, diagnostic tests, medication prescriptions, and referral to a specialist (Williams, Weinman & Dale, 1998; Jackson et al., 2001; Kravitz et al., 2002). Lower levels of patient satisfaction have been found to be related to

patients' desire for longer consultations and having a greater number of requests (Like & Zyzanski, 1987). This was demonstrated in a study where patients were found to want significantly more services than they received. Regression analysis showed that patient desires being met over five patient request categories (medical information, psychosocial assistance, therapeutic listening, general health advice and biomedical treatment) was the greatest predictor of patient satisfaction, accounting for 34% of the variance (Like & Zyzanski, 1987). Moreover, request fulfilment was found to be positively associated with fewer health concerns and greater symptom improvement at follow-up (Kravitz et al., 2002). Patients reporting no residual expectations, symptom improvement, neither requiring nor anticipating a need for another doctor visit for the symptom, and better functioning was shown to account for 38% and 40% of the variance in satisfaction at two weeks and three months post-consultation (Jackson et al., 2001). Another study showed that 30.1% of the variance in patient satisfaction was due to residual desire for referral 16.4 %, and residual desire for tests 8.6% (Marple, Kroenke, Lucey, Wilder & Lucas, 1997).

### 1.4.4. Doctor characteristics and patient satisfaction

Certain characteristics of clinicians have been linked to patient satisfaction. Patients of younger doctors had higher satisfaction scores than patients of older doctors, in terms of general satisfaction, perception of affective behaviour, and perception of the doctor's technical competence (Murphy-Cullen & Larsen, 1984). In another study, there was a tendency for older-looking doctors to receive higher satisfaction ratings than younger-looking doctors (Hall, Irish, Roter, Ehrlich & Miller, 1994). Differences in the seniority of doctors have also been noted. One study showed that more junior doctors scored higher on the subscale of general satisfaction (Murphy-Cullen & Larsen, 1984), but others found no significant differences in patient satisfaction relating to level of doctor

training (Like & Zyzanski, 1987) or number of years in practice (Anderson & Zimmerman, 1993).

Increased patient satisfaction has also been associated with patients' perception of the doctor having communicated adequate information to them and patients' perceptions of affective behaviour and technical competence (Murphy-Cullen & Larsen, 1984). Additionally, doctors achieved higher levels of patient satisfaction if they did not prescribe medication or if they had seen the patient before (Murphy-Cullen & Larsen, 1984).

There appears to be mixed evidence as to whether the gender of the doctor has an effect on patient satisfaction. Two studies reported that their patients were significantly more satisfied with female rather than male doctors (Bertakis, Helms, Callahan, Azari & Robbins, 1995; Delgado et al., 1993), while another reported greater satisfaction with male doctors (Hall et al., 1994) and a third finding no relationship between doctors' gender and patient satisfaction (Anderson & Zimmerman, 1993). Bertakis et al., (1995) suggested that female doctors tended to engage in more preventative style of practice and often exhibited greater interest in learning about the patients' families and social background.

There also appears to be an interaction between doctors' age and gender. Male patients examined by younger looking female doctors were significantly less satisfied than any other combination of patient gender or physician age and gender, although this finding did not hold true for female patients (Hall et al., 1994).

### 1.4.5. Relationship between communication, satisfaction and outcomes

The relationship between doctors and patients has been conceptualised as consisting of two broad dimensions of task-oriented and socio-emotional behaviours (Hall, Roter et al., 1988). Task-orientation relates to the clinicians' information-giving, question-asking and technical competence. The socio-emotional side relates to the clinicians' interpersonal proficiency. Both dimensions are related to patient outcomes including satisfaction, adherence and recall (Hall et al., 1988). On the task-orientation dimension the most important is information-giving, which has been found to be related to patient satisfaction, adherence, and to patients' recall of information and understanding of their condition. On the socio-emotional dimension, interpersonal competence, particularly partnership-building and having an interest in the patient's input was also related to satisfaction and recall and understanding (Hall et al., 1988).

Patient satisfaction with consultations, satisfaction with communication, and general satisfaction with medical care received, have all been found to correlate with patients' adherence to recommendations (Ley, 1982). The amount of information recalled by patients correlated with satisfaction with both the doctor and with communication (Bertakis, 1977; Brody, 1980). Other research showed that patients who felt they had been told the right amount recalled more than other patients (Cassileth, Zupkis, Sutton-Smith & March, 1980). Additionally, positive talk, which includes understanding and acceptance has been found to be positively related to satisfaction, adherence and recall and understanding. Conversely, negative talk, which includes anxiety, anger and irritation has been found to be negatively related to adherence (Hall et al., 1988).

The role of patients' communication in consultations has been the subject of much less scrutiny than that of doctors' communication. Patients appear to express few of their

medical worries and concerns to doctors, and this may affect their ability to remember instructions or events that occurred during the consultation. When patients were given the opportunity to explain their medical history and symptoms comprehensively, their ratings of satisfaction were higher. Training patients to articulate questions and extract information from doctors has been shown to improve patient outcomes (Hall et al., 1988).

A meta-analysis of communication and outcomes research revealed that there was a weak but significant relationship between doctor information-giving and adherence (either appointment-keeping or adherence to treatment recommendations) (Hall et al., 1988). The giving of more information was also highly predictive of greater understanding and recall. A cluster of verbal behaviours that has been described as 'partnership-building' or a more patient-centred approach has also been associated with outcomes of the consultation. Partnership-building includes two types of doctor behaviour, firstly, encouraging patients to contribute and secondly, taking a less controlling or dominant role. A clear positive association has been found between partnership-building and satisfaction, recall and understanding, but no such association has been found for adherence (Hall et al., 1988). More communication (defined in terms of length of interview in minutes or number of patient provider utterances) predicted greater satisfaction. Amount of communication was weakly positively related to recall and understanding but not significantly so (Hall et al., 1988). Doctor question-asking (information seeking) was not shown to be associated with satisfaction but was related to lower levels of adherence, with the exception of question-asking about adherence. There was also a tendency for question-asking to be associated with poorer recall and understanding (Hall et al., 1988).

Hypothetical situations were used to test the hypothesis that a positive interaction between patient and providers, in which conflict is negotiated well and criticism of the patient is avoided, correlates with adherence in patients with diabetes (Amir, Rabin & Galatzer, 1990). These authors were able to show a correlation between adherence and patients' negotiating skills, which suggested that patient participation in the medical encounter may be related to adherence in patients with diabetes (Amir et al., 1990). In a prospective study, the more patients expressed their views, the more they adhered to prescribed treatments (Rost, Carter & Inui, 1989).

In a large study with data collected from 2,166 patients undergoing abdominal surgery (cholecystectomy) patient satisfaction was found to be related to improved overall health status and reduced symptom reporting (Kane, Maciejewski & Finch, 1997). Doctors who were more patient-centred and who possessed a more facilitative style were suggested to be especially effective in lowering patients' post-consultation anxiety levels (Takayama, Yamazaki & Katsumata, 2001). Additionally, patient involvement in pre-operative education programmes has also been shown to hasten recovery and reduce patient anxiety (Webber, 1990).

### 1.4.6. Characteristics of doctor-patient communication and satisfaction

A number of researchers have looked at aspects of the doctor-patient interaction to assess particular features of the verbal exchange, which may lead to greater patient satisfaction. A study conducted with a reasonably large sample of patients (537) and doctors (127), in a number of outpatient clinics and private practices (11), identified five distinct communication patterns (Roter, Stewart. Putnam, Lipkin, Stiles & Inui, 1997). The first two communication patterns were described as 'narrowly biomedical' characterised by with closed-ended medical questions and biomedical talk and

'expanded biomedical', similar to narrowly biomedical but with some psychosocial discussion. These two categories accounted for 65% of all visits. The next most frequent category was 'biopsychosocial', where there was a balance between psychosocial and biomedical topics, accounting for 20% of visits. The two least frequently found categories was 'psychosocial' typified by psychosocial exchange, and 'consumerist' characterised by greater patient question-asking and doctor information-giving, accounting for 8% of visits each (Roter et al., 1997). In particular, greater patient satisfaction was found where the doctor's clinical style emphasised psychosocial aspects of care (Bertakis et al., 1998; Bertakis et al., 1991; Roter et al., 1997), whereas biomedical topics have been found to be negatively related to patient satisfaction (Bertakis et al, 1991). Consultations with sick, older and lower income patients by younger male doctors were found to be 'biomedically' oriented, and the doctors' ratings of satisfaction were highest in the 'consumerist' pattern and lowest in the 'narrowly biomedical' pattern (Roter et al., 1997). It has also been noted that question-asking (open and closed-ended) about psychosocial topics is positively related to patient satisfaction, whereas question-asking about biomedical topics is negatively related to patient satisfaction (Bertakis et al., 1991). In addition, the ratio of doctor to patient talk has also been related to patient satisfaction, the greater the amount the doctor spoke in comparison to the patient the less satisfied patients were, irrespective of how much each participant spoke or the length of the consultation (Bertakis et al, 1991).

### 1.4.7. Patients' communication style and patient satisfaction

The provision of information by patients has been shown to have a positive effect on patient satisfaction. Some examples include expressing agreement and understanding (Freemon, Negrette, Davies & Korsch, 1971) and patients explaining the health problem

fully in their own words during the medical history segment of the consultation (Stiles, Putnam, Wolf & James, 1979). However, provision of information has not always been shown to be positively related to satisfaction. More patient talk in comparison to doctor talk was shown to be negatively related to satisfaction (Freemon et al., 1971), and so was increased question-asking by patients following an experimental intervention to increase participation (Roter, 1977). Question-asking has also been found to be negatively related to satisfaction in consultations with oncologists (Ong, Visser, Lammes & de Haes, 2000). The author suggested that patients who ask questions are likely to desire more information, but in a sample of patients who actively asked questions about their medical situation failed to gain more information from their consultants. This led to the conclusion that where the informational needs of the patients were not met the result was increased dissatisfaction (Ong et al., 2000).

### 1.4.8. Patient affect and satisfaction

There are also relationship issues and aspects of patient affect that have been shown to be positively related to patient satisfaction. Some examples include both liking and having faith in doctors (Williams & Calnan, 1991), patient interest/engagement, friendliness, and warmth (Ong et al., 2000) and showing relief from tension (Carter, Inui, Kukull & Haigh, 1982). Equally, other factors have been shown to be negatively related to patient satisfaction, such as, patients displaying tension, anxiety, assertiveness (Carter et al., 1982; Inui, Carter, Kukull & Haigh, 1982) and anxiety/nervousness (Ong, et al., 2000). Additionally, negative talk from patients, for example, expressing disapproval or criticism, has also been shown to be negatively related to patient satisfaction (Ong et al., 2000).

### 1.4.9. Doctors' communication style and patient satisfaction

Patients' satisfaction with doctors' communication has been shown to account for as much as 70.6% of the variance in their satisfaction with medical care received (Buller & Buller, 1987). Certain aspects of the doctor's communication style have also been related to increased patient satisfaction. In particular, the provision of information (Freemon et al., 1971; Comstock, Hooper, Goodwin & Goodwin, 1982; Roter et al., 1988, 1989; Williams & Calnan 1991; Ong et al., 2000), listening behaviours (Comstock et al., 1982) and time spent on health education, examination and treatment (Robbins, Bertakis, Helms, Azori, Callahan & Creten, 1993). Other factors that appear to be negatively related to patient satisfaction, include time spent on history taking (Freemon et al., 1971; Robbins et al., 1993) and lack of psychosocial care (Bensing, 1991).

There are also characteristics of doctor affect that impact positively on patient satisfaction. For example, if the doctor is friendly and approving and engages in social talk (Freemon et al., 1971), is encouraging and displays empathy (Wasserman, Inui & Barriatua 1984), and behaves courteously (Comstock et al., 1982). Additionally, social talk, positive non-verbal behaviour, partnership-building and positive talk are also related to greater patient satisfaction (Roter et al., 1988, 1989). A number of investigators have shown that the doctor's communication style, particularly showing patient-centeredness, is positively related to patient satisfaction. Examples include asking for opinions and help (Stewart, 1984), proficiency in giving information and counselling, less bored voice, less socio-emotional conversation (Roter et al., 1987), being less directive and providing reassurance, support, empathy, encouraging patients to ask questions, offer opinions and express feelings (Street, 1992). Doctor acquiescence (being less directive) was positively correlated with patient satisfaction (Anderson &

Hinckley, 1998). Interest/engagement and friendliness/warmth were related to satisfaction (Ong et al., 2000). High levels of satisfaction have also been reported where patients report that their statements and concerns were fully understood, and that they were able to talk freely to their doctor (Treadway, 1983). Greater patient satisfaction was found where GP's have a more positive attitude towards the democratic rights of patients, and provide more information, prescriptions and referrals (Sixma et al., 1998).

Other factors have been shown to be negatively related to patient satisfaction. For example, doctors who communicate negative affect when trying to convey positive affect (Freidman, DiMatteo & Taranta, 1980), showing tension (Carter et al., 1982), not taking problems seriously (Williams & Calnan, 1991), displaying anger and disagreeing (Bensing, 1991). In addition, excessive question-asking (Roter et al., 1987), negative talk and displaying anger/irritation have been negatively associated with satisfaction (Ong et al., 2000). It has been suggested that overall it is the affective quality of the consultation that seems to be the most important factor in determining both patient satisfaction and quality of life (Ong et al., 2000).

### 1.4.10. Gender and the relationship between communication and satisfaction

The literature suggests that both doctor and patient gender can influence the communication process. One group has demonstrated that where both parties are male, the patients appeared to like positive statements such as those of approval and agreement as well as partnership statements suggesting a 'we' orientation. Male patients seemed to dislike the doctor addressing psychosocial problems, but were more satisfied if female doctors raised psychosocial issues. Female patients were more satisfied if psychosocial issues were discussed, regardless of the gender of the doctor (Hall et al., 1994). In consultations where the patient is female and the doctor is male, the patients

were more satisfied with more emotionally supportive talk such as showing concern and empathy (Hall et al., 1994). Another study has shown that overall, female patients initiate significantly more agendas than male patients do, in particular, physical and emotional agendas over social agendas (Lunn, Williams, James, Weinman & Newman, 1998). However, patients were also more likely to return to emotional agendas with female doctors than they were with male doctors (Lunn et al., 1998). Where both patient and doctor were female the pattern is the same as where both doctor and patient are male regarding the patients liking positive statements such as those of approval and agreement as well as partnership statements indicating a 'we' orientation. Contrary to all three other male/female dyads, successful interruptions by either party were associated with patient satisfaction (Hall et al., 1994). Research has also shown that patients talked significantly more where both doctor and patient were female in contrast to where both parties were male (Lunn et al., 1998). The authors suggest that this may be because an all female dynamic is more conducive to an open and thorough discussion of the patient's problems (Lunn et al., 1998).

### 1.4.11. Perceptions of control over medical interviews

A study examining how perceived control related to patient satisfaction found that doctors' perceptions of control contributed the most variance in predicting patient satisfaction (Anderson & Zimmerman, 1993). The doctors who characterised the doctor-patient relationship as a partnership were found to have the most satisfied patients. There was also quite a high level of agreement between both parties' perception of the relationship with 60% of doctor-patients dyads agreeing. In 23% of encounters, patients rated the interaction as a partnership in comparison to the doctor who rated the interaction as being doctor-controlled. In 17% of encounters, the doctor rated the relationship as a partnership whereas patients perceived the interaction as doctor

controlled. Patients with the highest levels of education were more likely to agree with doctors about the nature of the relationship. However, patient satisfaction did not differ between pairs who agreed or disagreed about the nature of the relationship. The doctors who viewed the relationship as a partnership, spent significantly more time in the encounter in contrast to those who characterised the relationship as doctor-controlled. However, the length of the encounter was not related to patient satisfaction (Anderson & Zimmerman, 1993). The dominance of the doctor has been shown to have a significant negative effect on patient satisfaction (Bertakis et al., 1991).

## 1.5. BARRIERS TO COMMUNICATION AND MEDICAL EDUCATION

### 1.5.1. Problems with doctor-patient communication in practice

Communication between doctors and patients is not straightforward and numerous communication problems have been identified. Patients' failure to understand and recall information they have been given appears to be a substantial problem. A review of three studies demonstrated that somewhere in the region of 7-47% of general practice patients did not understand the diagnosis of their condition. Furthermore, 13-53% failed to understand their prognosis and 35-87% of the patients failed to comprehend their prescription instructions (Ley, 1983). The percentage of recall of information by hospital inpatients has also been shown to vary between 40-80% (Ley, 1988). In a more recent study, where patient recall of the consultation was compared with what the doctor had actually said, using transcripts of the interaction, patient recall was found to be surprisingly accurate (McDonald, Daly, Jelinek, Panetta & Gutman, 1996). In a study using qualitative analysis of in-depth interviews with patients who had symptomatic heart failure, knowledge about the mechanisms of acute heart failure were good, but most lacked a clear understanding of why they had developed heart failure. Patient

questions tended to focus on the nature of their condition and its likely prognosis. Some patients' narratives suggested that they were aware of their prognosis but did not openly acknowledge it, illustrating ambivalence towards gaining greater knowledge of their condition (Rogers, Addington-Hall, Abery, McCoy, Bulpitt, Coats & Gibbs, 2000). Perhaps a partial explanation for lack of understanding by patients is the doctors' use of medical terminology, which has found to be inadequately understood, particularly by young, urban, and less educated patients in the USA (Lerner, Jehle, Janicke & Moscati, 2000). For example, the percentage of patients that did not recognise analogous terms was 74% for heart attack versus myocardial infarction and 79% for bleeding versus haemorrhage (Lerner et al., 2000).

It has also been found that about half of patients' concerns and complaints are not raised during the consultation (Stewart, McWhinney & Buck, 1979), particularly in general medical practice where the diagnoses of psychosocial and psychiatric problems have been reported to have been missed in up to 50% of cases (Freeling, Rao, Paykel, Sireling & Burton, 1985). More recently, it has been suggested that 19-26% of primary care patients have mental disorders, 31-46% have significant psychological distress and that only 24-56% of these mental disorders are recognised by primary care physicians (Robinson & Roter, 1999). Evidence suggests that in the primary care setting, this may be due to patients expressing their mental problems in terms of physical symptoms (van der Pasch & Verhaak, 1998).

Patients would appear to be reticent about raising psychosocial issues, with one study showing that less than 3% reported a psychosocial problem as their major reason for their visit, psychosocial problem disclosure occurred during the opening segment in 17% of visits and after the opening segment in 34% or 51% in total. In situations where

the doctor inquired first about psychosocial problems the figure rose to 67%. Doctors asking about problems were particularly productive with unfamiliar patients and can provoke a substantial increases in psychosocial disclosure by simply asking a few questions about mood or interpersonal problems during consultations (Robinson & Roter, 1999).

Several communication problems relating to patient behaviours appear to be particularly difficult for doctors to deal with effectively (Levinson, Stiles, Inui & Engle, 1993). In this study, the problems identified were lack of trust/agreement, patients presenting too many problems, failure of both parties to understand each other, lack of adherence to instructions or medical recommendations by patients and highly demanding or controlling patients. These problems probably result from differences in beliefs about the patient's medical condition, the presentation of too many problems when there was insufficient time to deal with them and the failure of both parties to adequately understand each other, as doctors and patients expressed themselves using a different language from one another. Doctors also expect to be in charge of consultations and some felt uncomfortable with overly assertive patients. Overly demanding patients may pressurise doctors to order specific tests or insist on referrals that the doctor may feel unnecessary. Doctors can experience frustration in specific problem areas where patients abuse alcohol or drugs, or suffer from chronic pain which lead to the doctor experiencing distress (Levinson et al., 1993). In this study, the doctors were also more likely to attribute the communication problems to the patient rather than to their own limitations (Levinson et al., 1993).

Another issue raised is that of reassurance, particularly when results of diagnostic testing are normal. In a study with cardiology patients where 40 patients were referred

for echocardiography, either because of symptoms (10) or heart murmur (30), all but one was shown to be normal. The patients with symptoms were left with anxiety about the heart despite normal test results and reassurance by the consultant. Of the patients with a pre-existing murmur, 29 had no other abnormality apart from the murmur, 11 became anxious after detection of the murmur and 11 had residual anxiety despite normal test result. Reassurance of the 'worried well' constitutes a large part of medical practice (McDonald et al., 1996). It seems to be widely assumed that explaining that tests have shown no abnormality is enough to reassure patients. The results of this study refute this and emphasise the importance of personal and social factors as obstacles to reassurance. A non-significant but positive relationship was found between the quality of the consultation and success of reassurance. Nevertheless, the success of reassurance rarely followed a consultation that had been rated as poor (McDonald et al., 1996).

Several reasons have been reported by patients that illustrate some of the barriers to communication with doctors. Patients gave various reasons why they believed doctors did not tell them as much about their condition as they would have liked (Rogers et al., 2000). Some felt that doctors generally did not want to give patients too much or inappropriate information about their illness or its treatment. Some patients voiced concerns about their drugs and the possibilities for alternative interventions. Although some felt unable to raise these issues with their doctors, others believed that their doctors knew what was best for them and that they should not ask questions (Rogers et al., 2000). However, another study showed that identified a number misunderstandings between patients and doctors that have the potential or adverse consequences for taking medication (Britten, Stevenson, Barry, Barber & Bradley, 2000). All of the misunderstandings were associated with lack of patient participation in the consultation,

with particular reference to the voicing of expectations and preferences or discussion about the doctors' decisions or actions (Britten et al., 2000).

Despite the evidence suggesting that patients' active participation is beneficial, they actually appear to engage in little question-asking. It has been found that question-asking is the least frequent (main) category of verbal behaviour by patients in medical visits. On average, 7% (SD 3.5) of all patient talk falls into the category of question-asking, with a range from 2.6% to 14.5%. This represents around three questions per visit (Roter, Hall & Katz, 1987). In a study specifically looking at question-asking about medications, 47% of the patients observed did not ask any questions although they were taking at least one medication (Sleath, Roter, Chewning & Svarstad, 1999). It has been suggested that some patients have reported confusion or short-term memory loss as symptoms or side effects of their illness and that this may have contributed to their inability to remember to ask questions as planned of their doctors (Rogers et al., 2000). However, the apparent lack of patient question-asking may be ascribed to strategies utilised by some doctors to confine and regulate the topic of conversations, especially question-asking. Some controlling strategies used by doctors have been identified and these include interrupting the patient, using jargon and introducing new topics (Mishler, Clark, Inglefinger & Simon, 1989).

Other more practical reasons have been proposed as contributory factors to difficulties in communicating with doctors, for example, travelling to the hospital for appointments and locating the right department once inside the hospital (Rogers et al., 2000). These and other more practical difficulties associated with attending appointments may result in patients arriving for appointments feeling disgruntled and not in the right frame of mind to make the most of their consultation.

These studies illustrate some of the communication difficulties faced by both doctors and patients during consultations. It has been found that most complaints by the public about doctors do not deal with problems of clinical competency but with communication problems (Richards, 1990).

### 1.5.2. Communication skills training for doctors

These difficulties in doctor-patient relations has been recognised and considerable research has been conducted on patient physician-communication over the last 30 years (Ong et al., 1995; Roter & Hall, 1989). Increasingly the importance of the role that communication plays in the relationship between doctors and their patients has led to greater emphasis on communication skills training for health care professionals. Since the 1960's, there has been a dramatic increase in the teaching of patient communication skills as a formal component of most medical curricula. Before then, communication skills were generally subsumed under the heading of "bedside manner," where students and medical residents participated in teaching rounds with the senior clinicians that served as their mentors. This apprenticeship approach has been gradually replaced by formal instructive courses, patient simulation techniques, and various forms of programmed instruction, supervised practice, and specific feedback from instructors and observers trained in patient communication skills (Rowland-Morin & Carroll, 1990). The research literature in this field clearly demonstrates the advantages of such training methods (Crisp, 1986; Kendrick & Freeling, 1993). There is now widespread agreement about the importance of effective communication between doctor and patient and the formal teaching of communication skills being considered an essential aspect of medical education (Simpson, Buckman, Stewart, Maguire, Lipkin, Novak & Till, 1991). Nowadays, due to advances in educational theory and methods, it is possible to teach

medical interviewing just as rigorously as other clinical skills (Novack, Dubé & Goldstein, 1992).

## 1.6. PATIENT PARTICIPATION

### 1.6.1. Introduction

Since the 1960's, there has been a gradual shift from a paternalistic model of the doctor-patient relationship to a more contemporary view where the relationship is based on joint negotiation and closer affiliation between doctor and patient (Emanuel & Emmanuel, 1992; Charles, Gafni & Whelan, 1997). The notion of patient participation is derived from the development of patient autonomy in the doctor-patient relationship, which includes decision-making and control (Sims, 1999). More specifically, a model of patient participation and decision-making has been proposed (Charles et al., 1997). The key characteristics of this model of shared decision-making are that both doctor and patient share information, that both parties build an agreement about the preferred treatment option, and that consensus is reached on the implementation of the treatment of choice (Charles et al., 1997). The importance of this paradigm shift has been recognised by the World Health Organization which has stated that patient involvement in care is not only desirable, but a social, economic, and technical necessity (Waterworth & Luker, 1990) and by the UK government via initiatives such as the Patients' Charter (Department of Health, 1991). Despite these ideals, there is some evidence to suggest that in GP practices in the UK, the Charles et al. (1997) model of patient participation and shared-decision making has not yet been achieved (Stevenson, Barry, Britten, Barber & Bradley, 2000).

### 1.6.2. Definition of patient participation

Patient participation has been described as, 'an essential component of the delivery of health care is the consultation between the patient and the health care provider. Participation in the medical consultation is fundamentally a communicative event in which clinicians and patients use talk to exchange information, to share their expertise and points of view, to build a trusting relationship, and to make health-related decisions' (Street & Millay, 2001).

### 1.6.3. Identification of patients who wish to participate

While it may be desirable for patients to participate in medical consultations, not all patients may wish to participate equally. A number of studies have tried to identify which patients prefer greater participation. Younger patients have been found to want more information, more discussion and play a greater role in decision-making than older patients (Cassileth et al., 1980), and female patients tend to communicate more (Hall et al., 1994; Hooper et al., 1982; Waitzkin, 1985). Other factors are not so consistently found to be associated with desires for patient participation. However, studies with primary care patients have found a relationship between preference for participation and higher socioeconomic status (Ende, Kaziz, Ash & Moskowitz, 1989; Strull, Lo & Charles, 1984). It has also been found that situational factors such as type of illness were more directly related to information-seeking behaviours than patient attitudes or sociodemographic characteristics (Beisecker & Beisecker, 1990).

Ethnicity may also influence preference for patient participation. In the USA one study reported that white patients were more likely to believe that patients should participate in medical decisions (Strull et al., 1984), and more recently, African American patients rated their visits with doctors as less participatory than their white counterparts (Cooper-

Patrick, Gallo, Gonzales, Vu, Powe, Nelson & Ford, 1999). Patients' ethnicity may also influence beliefs about rules governing communication including the expected roles of doctor and patient. For example, one American study showed that Spanish speaking patients expected specific communication behaviours from their doctors, governed by culturally defined rules and values. When these behavioural rules were violated, there was a complete breakdown in the communication process (Erzinger, 1991).

It has also been suggested that health status may affect patients' desire for more or less participation, but the results are not clear-cut. Among cancer patients, poor 'performance status' (rated by interviewers or doctors on a scale ranging from 'capable of normal activity' to '100% bedridden') correlated with desire for a less participatory role in some studies but not others (Blanchard, Labreque, Ruckdeschel & Blanchard 1988; Cassileth et al., 1980). In the primary care setting, healthier patients wanted to be more active in decision making than sicker patients (Ende et al., 1989). A recent study with hypertensive patients showed that those who had been hypertensive for longer were less inclined to favour participation in the management of their hypertension. Those with pessimistic views of their hypertension and with higher blood pressure were more likely to want to participate (Sims, 1999).

### 1.6.4. Doctors' beliefs and preferences for patient participation

Only a few studies have evaluated doctors' beliefs about patient participation in medical care. Evidence also suggests that when doctors estimate patient preferences for participation and involvement in decision-making they are often inaccurate by underestimating patients' desire for information but overestimate patients' desire for involvement in decision making (Strull et al., 1984; Waitzkin, 1984). It has also been demonstrated that many doctors dislike patient-initiated questions (Katon & Kleinman,

1980; Roter & Hall, 1989). Other factors may also influence the extent that doctors' permit their patients to participate, for example, practical considerations such as perceived time constraints and the medical management of patients.

### 1.6.5. Effect of patients' and doctors' preferences on patient participation

The way in which patients' and doctors' wishes for patient participation influence patients' actual participation in the consultation is uncertain. Several studies have tried to explore the association between what patients say they would like with regard to participation and what actually takes place. The results show that while most patients express the desire for more information, patients seldom attempt to obtain it during medical visits (Beisecker, 1990; Beisecker & Beisecker, 1990). In addition, patients' desires for information in the medical encounter appear unrelated to information-seeking behaviour, or to the information-giving behaviour of the doctor (Beisecker & Beisecker, 1990; Waitzkin, 1985).

### 1.6.6. Patients preferences and decision making

Studies investigating whether patients actually want to participate in treatment decisions have yielded conflicting results, often depending on the definition of participation in decision-making. This can range from the patient actively engaging in the decision-making process, to the patient making the ultimate decision (Guadagnoli & Ward, 1998). Reports of patients' preferences for direct participation in medical decision-making are inconsistent. While some studies have found that a majority of patients have a strong desire for participation in medical decision-making, others have not, or results have not been clear-cut. In a study where patients were asked about the need for medication and dosage of drugs to be administered, the majority of the patients said they preferred to leave the responsibility for decision-making in the hands of their

doctor (Beisecker & Beisecker, 1990). This highlights the influence of the different types of decisions that need to be made, such as those involving dosage of drugs that would require expert knowledge and therefore tend to be deferred to the doctor.

Cardiology and surgery patients were found to express a desire for information, but few wished to play an active role in decision-making regarding treatment. However, the doctors in this study strongly believed that in most cases only one treatment was indicated so alternatives were rarely discussed with patients (Lidz, Meisel, Osterweis, Holden, Marx & Munetz, 1983). In another study of 285 cardiology patients scheduled for an angiogram, most patients wanted doctors to make the diagnosis and identify the treatment options, but showed a strong preference for involvement in decisions such as treatment choice (Deber, Kraetschmer & Irvine, 1996). However, in a survey of 150 women recently diagnosed with breast cancer, it was found that 20% wanted an active role in deciding their treatment, 28% preferred a joint decision and 52% wanted their surgeon to decide for them (Beaver, Luker, Owens, Leinster, Degner & Sloan, 1996). It has also been claimed that there is little evidence that patients find shared decision making acceptable (Coulter, 1997). In a study to determine whether patients preferred a shared or directed style of consultation in the decision making part of the general practice consultation, it was found that patients presenting with a physical problem and older patients preferred a directed approach. Whereas those patients from social classes I or II and patients who smoked, were more likely to prefer a shared approach (McKinstry, 2002). Although the studies conducted so far involved fairly limited samples and have some conflicting results, it does seem that patients want to be more involved in decision-making when they have sufficient information about the options available, what they entail, and the consequences of each option.

### 1.6.7. The extent to which patients can participate

Various models have been proposed to enable doctors to communicate more effectively with their patients. However, there will always be some imbalance in he doctor-patient relationship since the patient is sick and vulnerable and the doctor has the expert knowledge. Social, ethnic, and educational differences has been found to exacerbate this imbalance, in some cases to the point where a patient may be too intimidated to participate as much as he or she would like (Brody, 1980; Haug & Lavin, 1981; Emanuel & Emanuel, 1992)

In a study of 210 hypertensive outpatients (Strull et al., 1984), 63% said that the doctor usually made decisions about their care, but less than half of the entire sample (47%) preferred this option. In this study, doctors and patients differed widely in their perceptions concerning participation: 80% of doctors said that patients had participated in decision-making, yet only 30% of patients felt his was the case. Similarly, in-depth interviews with 12 patients found patients more concerned with doing 'what is right', in pleasing the doctor or nurse, rather than in participating in decisions about their care (Waterworth & Luker, 1990). In a survey of cancer patients, 29 percent felt their participation regarding their decision whether to have investigational chemotherapy was not encouraged, and over 20% had several questions that they had not asked despite being given the opportunity (Penman, Holland, Bahna, Morrow, Schmale, Derogatis, Carnrike & Cherry, 1984).

Studies measuring whether patients actually want to participate in decision-making have yielded conflicting results. A large study of over 2,000 patients with a variety of chronic disease showed that 69% preferred to leave the medical decisions to the doctor (Neeraj & McHorney, 2000). Nevertheless, it would appear that the majority of patients want

more information than they receive from their doctor, but it is not just the quantity of information but the quality of the information supplied that is important to the patient (Ley, 1988). A review of the literature on doctor-patient communication concluded that patients were often reluctant to ask for further information even when they wanted it (Ley, 1988).

### 1.6.8. The benefits of patient participation on outcomes

Researchers have investigated whether patients' involvement in their care leads to improved medical outcomes such as reduced pain and anxiety, quicker recovery, and increased adherence. Some research suggests a measurable benefit of participation in terms of such outcomes (Stewart, 1995). Increased patient participation in the medical encounter might improve health outcomes for several reasons. Firstly, the complexity of a treatment regimen and its fit with the patient's lifestyle clearly affect adherence with recommended treatments. If patients are permitted to communicate their concerns, their lifestyle, and their priorities to the provider, the treatment plan is more likely to be appropriate and realistic for each patient (Golin, DiMatteo & Gelberg, 1996). Secondly, as patients receive more of the information they want about their health problems, they have the knowledge they need to care for their condition. In addition, as patients are more in control of the interaction during the medical encounter, they may feel empowered to carry out their treatment plans. Thirdly, for some patients, increased participation in the doctor visit may improve their adherence by increasing their satisfaction with medical care (Golin et al., 1996). Patient ratings of satisfaction with the care received can be an outcome of their level of participation in the medical consultation (Golin et al., 1996), and the way in which doctors communicate with their patients has been found to have a significant effect upon outcomes (Ong et al., 1995).

### 1.6.9. The patient's role in medical consultations

However, successes and failures in communication are not only the responsibility of the doctor. It has been shown that if patients both provide the information sought by doctors and volunteer additional information, both doctor and patient are more likely to arrive at a common definition of the patients' problem (Rost et al., 1989). Research has also demonstrated that patients who are more active during consultations by asking questions, proffering information, and expressing opinions are more likely to understand the treatment recommendations more accurately, to understand the rationale for the prescribed regimen, and to experience improved medical outcomes (Rost et al., 1989). Nevertheless, both parties shape conversations that occur during medical interviews. The doctors' interaction with a patient is partly determined by the doctor and partly, but probably less controlled by what the patient allows the doctor to do. Since conversational exchanges require co-ordination for turn-taking and subject development, patients potentially have the verbal resources to wield substantial control over the doctor's behaviour (Street, 1991). Evidence suggests that patients want information from their doctors, but that they rarely attempt to elicit the desired information. Furthermore, patients may be successfully coached to ask questions and be more active in the doctor-patient encounter (Beisecker, 1990; Rost et al., 1989).

## 1.7. Summary

Doctor-patient communication is a complex phenomenon and numerous factors influence the interaction. Characteristics of both doctor and patient can have an effect on the process of communication and on outcomes, such as satisfaction and adherence. The process of communication is also directly related to outcomes. However, there are several hindrances to effective communication regardless of the provision of communication training for medical students and post-graduates. Patient participation in

consultations is increasingly being seen as an important aspect of medical care. It would seem that in general patients have a stronger preference for gaining as much information as possible in preference to a greater involvement in decision-making. Increased patient participation has also been found to be beneficial to patients in terms of outcomes, particularly patient ratings of satisfaction and adherence to treatment recommendations. Research into the topic of intervening with patients to encourage greater participation in consultations is the subject of the next chapter.

# CHAPTER 2

# IMPROVING PATIENTS' COMMUNICATION WITH DOCTORS: A SYSTEMATIC REVIEW OF INTERVENTION STUDIES

## 2.1. Introduction

Chapter one demonstrated that, despite the evidence suggesting that active participation in medical consultation is desired and beneficial to patients, in practice patients often contribute little to the consultation. A number of researchers have set out to redress the balance, by intervening to improve the patients' contribution to their consultations. Anderson and Sharpe (1991) reviewed six separate interventions to train patients to communicate more effectively with their doctors. The findings from this review suggested that interventions were beneficial, although there were too few studies to make reliable comparisons among different forms of interventions.

This systematic review specifically examines intervention studies directed at patients. It incorporates the six studies that were subject of the earlier review and considers how the evidence on this topic has accumulated to date.

### 2.1.1. Aim of the systematic review

This review examines intervention studies designed to improve patients' communication with their doctors. The studies are considered in terms of: (a) the populations investigated, (b) design, (c) the participating doctors, (d) the types of interventions used, (e) the impact of the interventions on patients' participation during the consultation and on outcomes, and (f) the links between patient characteristics and the success of the interventions.

## 2.2. Methods

### 2.2.1. Identification of studies

Literature searches were conducted to identify published reports of studies using Medline (1966-2001), PsycLIT (1966-2001), and BIDS Social Science Citation Index (1981-2001). The key search terms were **patient participation, *communication intervention, *communication skills training* and **patient education.* The search terms 'patient participation' and 'patient education' were combined with the term 'communication' to focus the search. Papers were included if they described an intervention designed to improve patients' communication with doctors in any setting, reported data about the impact of the intervention on patients' communication, and were published in English. The reference sections of papers that met the inclusion criteria were also searched, although this failed to yield any additional studies.

### 2.2.2. Overview of studies identified

Twenty-five papers describing twenty separate studies met the inclusion criteria [1-20] (Table 2.1). The discrepancy was due to investigators reporting findings from the same samples in different papers. To avoid confusion, papers using the same data set have been considered as a single study.

Two thirds of the studies were published within the last decade, indicating an increasing recognition of the importance of patient participation in the consultation. The studies were conducted in four countries, with the majority from the USA and only five from the UK.

## 2.3. Results

### 2.3.1. Populations studied

The settings were primarily outpatient and primary care clinics (Table 2.1), with one study conducted in the community (Tennstedt, 2000), and one study considering inpatients (Butow et al., 1994). No studies considered mental health services, despite evidence that patients attending these services often have unspoken requests (Noble, Douglas & Newman, 1999). One study used healthy volunteers as simulated patients (Wallston et al., 1979), which is a procedure of questionable validity.

The sample sizes varied considerably, with a range from 20-1077 (Table 2.1). The majority of studies were conducted with adults, with a mean or median age of 28-77 years. Just one of the interventions was directed at children (Lewis et al., 1991). In most of the studies the sample was mainly or all female (Table 2.1). Three studies omitted to report on the age of the sample and two on the gender.

Although most of the studies described where the intervention took place, many failed to explain the process of care, for example, the sequence of events after the patient's arrival at the clinic, or the range of health professionals providing care. Additionally, few reported whether patients attended for more than one consultation, or described patients' previous experience with the service, despite the possibility that familiarity and pre-established interaction patterns may influence patients' contribution to the consultation. Only half of the studies reported the timing of the delivery of the intervention in relation to patients' previous experience with the service (Greenfield et al., 1985; Tabak, 1988; Butow et al., 1994; Ford et al., 1995; Street et al., 1995; Hornberger et al., 1997; Brown et al., 1999; Fleissig et al., 1999; Cegala et al., 2000; Martinali et al., 2001). In six further studies, previous experience was implied (Roter,

1977; Robinson & Whitfield, 1985; Frederickson & Bull, 1995; McCann & Weinman, 1996; McGee & Cegala, 1998; Tennstedt 2000).

### 2.3.2. Design

Over half of the studies (11/20) used a randomised controlled experimental design, comparing one or more experimental conditions with an attention placebo control (Table 2.1). In three of these, the doctors or clinic sessions were randomised, rather than individual patients (Roter, 1977; Lewis et al., 1991; Hornberger et al., 1997). Six studies using a randomised controlled trial design failed to include an attention placebo control condition, and three used a quasi-experimental design, both of which reduce the confidence with which improvement in patients' communication can be attributed to the intervention.

All but two of the studies assessed the impact of the intervention on the process of communication and outcomes of the consultation (Frederickson & Bull, 1995; Ford et al., 1995). Three studies examined the influence of patient characteristics on responses to the interventions, considering a small range of variables (Wallston et al., 1979; Anderson et al., 1987; McCann & Weinman, 1996).

Fifteen of the twenty studies used only post-intervention measurement. Only four studies examined baseline and post-intervention measures to enable changes due to the intervention to be examined (Greenfield et al., 1985; Ford et al., 1995; Street et al., 1995; Cegala et al., 2000).

**Table 2.1. Studies of interventions to improve patients' communication with doctors**

| No. | Authors | Country | Population | n | Sample characteristics | | Design | Control groups |
|---|---|---|---|---|---|---|---|---|
| | | | | | Age § | Gender | | |
| 1a<br>1b | Roter '77<br>Roter '84 | USA | Outpatient - medical clinic | 200 | Median = 50 | Mainly female | RCT | Placebo |
| 2 | Wallston et al. '79 | USA | Simulated patients - hypertension | 36 | Median = 28 | F = 100% | RCT | Placebo |
| 3 | Robinson & Whitfield '85 (studies 1 & 2) | UK | Primary care | 131<br>127 | Not reported | Not reported | Quasi | Placebo |
| 4a<br>4b<br>4c | Greenfield et al. '85<br>Greenfield et al. '88<br>Kaplan et al. '89 | USA | Outpatient - peptic ulcer, diabetes, hypertension, breast cancer | 252 | 47-55 (all groups) | F = 58% | RCT & Quasi | Placebo |
| 5 | Anderson et al. '87 | USA | Outpatient - hypertension | 150 | 58 | F = 0% | RCT | Placebo |
| 6 | Tabak '88 | USA | Family medicine clinic | 67 | 35 | F = 81% | RCT | Placebo |
| 7 | Thompson et al. '90 (studies 1 & 2) | USA | Outpatient - obstetrics and gynaecology | 53<br>49 | 39 (study 2) | F = 100% | RCT | Placebo |
| 8 | Lewis et al. '91 | USA | General paediatric practice | 141 | 8 | F = 43% | RCT | Placebo |
| 9 | Butow et al. '94 | Australia | Outpatient & inpatient - medical oncology | 142 | 51 | F = 84% | RCT | Placebo |
| 10 | Frederickson & Bull '95 | UK | Primary care | 80 | Not reported | Not reported | UC | UC |
| 11 | Ford et al. '95 | UK | Outpatient - medical oncology | 95 | 44 | F = 59% | RCT | True |
| 12 | Street et al. '95 | USA | Outpatient - breast cancer | 60 | 59 | F = 100% | RCT | None |
| 13a<br>13b | McCann & Weinman '96<br>McCann & Weinman '96 | UK | Primary care | 120 | 43 | F = 61% | RCT | Placebo |
| 14 | Hornberger et al. '97 | USA | Primary care | 201 | 46 | F = 54% | RCT | Placebo |
| 15 | McGee & Cegala '98 | USA | Primary care | 20 | 37 | F = 70% | Quasi | True |
| 16 | Brown et al. '99 | Australia | Outpatient - medical oncology | 60 | 53 | F = 52% | RCT | True |
| 17 | Fleissig et al. '99 | UK | Outpatient - dermatology, gynaecology, orthopaedics | 1077 | Not reported | F = 76% | RCT | True |
| 18a<br>18b | Cegala et al. '00<br>Cegala et al. '00 | USA | Family practice clinic/private offices | 150 | 45 | F = 71% | RCT | True |
| 19 | Tennstedt '00 | USA | Community sites | 314 | 77 | F = 83% | RCT | True |
| 20 | Martinali et al. '01 | Netherlands | Outpatients - cardiology | 103 | 64 | F = 19% | RCT | Placebo |

**Key**

* Papers reporting findings from the same patient samples are grouped together

N = the number of patients providing data for the study

§ mean age reported unless otherwise specified

F = Female

RCT = Randomised controlled trial, Quasi = quasi-experimental, UC = unclear

Placebo = placebo control group, True = non-intervention group, None = no control group

### 2.3.3. Participating doctors

Out of the twenty studies, two did not assess patient communication with doctors (Wallston et al., 1979; Anderson et al., 1987) and a further two studies failed to report on how many doctors participated (Tennstedt, 2000; Martinali et al., 2001), but the latter implied that there was more than one. A further three studies had just one participating doctor (Butow et al., 1994; Frederickson & Bull, 1995; McCann & Weinman, 1996) and the remainder ranged from two to fifty six, with eight studies having ten or more doctors (Table 2.2).

Generally, there was little information provided about the participating doctors with seven studies reporting the gender of the doctors (Roter, 1977; Lewis et al., 1991; Street et al., 1995; McCann & Weinman, 1996; Hornberger et al., 1997; McGee & Cegala, 98; Cegala et al., 2000) and three studies reported the doctors' age (Lewis et al., 1991; McCann & Weinman 1996; Hornberger et al., 1997). Three studies provided some indication of the doctors' experience in terms of length of time in practice (Lewis et al., 1991; McGee & Cegala, 1998; Cegala et al., 2000). A further six reported on the seniority of the participating doctors (Greenfield et al., 1985; Tabak, 1988; Lewis et al., 1991; Ford et al., 1995; Hornberger et al., 1997; Fleissig et al., 1999). Eight studies reported on the speciality of the doctors (Robinson & Whitfield, 1985; Butow et al., 1994; Frederickson & Bull, 1995; Street et al., 1995; McCann & Weinman 1996; Hornberger et al., 1997; Brown et al., 1999; Martinali et al., 2001), while three provided no details (Roter 1977; Thompson et al., 1990; Tennstedt, 2000).

Four of the studies stated that the participating doctors were aware of the general aims of the study (Greenfield et al., 1985; Thompson et al., 1990; McCann & Weinman, 1996; Cegala et al., 2000), but two of these reported that the doctors were not aware of

specific details (Table 2.2). The remaining studies made no mention of the doctors' awareness of the research aims. Although awareness of the research intention was not reported in many instances, it is unlikely that the doctors would be totally unaware of the purpose of the studies, as presumably they had consented to participate. Almost half of the studies reported that the doctors were unaware of the patients' allocation to experimental groups (Roter, 1977; Greenfield et al., 1985; Tabak, 1988; Thompson et al., 1990; Butow et al., 1994) Frederickson & Bull, 1995; McCann & Weinman, 1996; McGee & Cegala, 1998; Cegala et al., 2000), thereby reducing the risk of bias, but the remainder failed to report on this important detail.

In the studies with more than one participating doctor, eleven did not specifically examine or discuss any potential differences between the doctors' communication style and how this might have an impact on the effects of the intervention and patient outcomes (Roter, 1977; Robinson & Whitfield, 1985; Greenfield et al., 1985, 1988; Kaplan et al., 1989; Tabak, 1988; Thompson et al., 1990; Lewis et al., 1991; Ford et al.,1995; Street et al., 1995; Hornberger et al., 1997; Brown et al., 1999; Martinali et al., 2001). One study compared the two doctors on two communication criteria and found no differences between the doctors on these measures but this was for the purpose of combining the data rather than examining any differences (Robinson & Whitfield, 1985). In two of the studies using a single doctor, one deliberately selected a single doctor to account for any impact of the doctors' clinical style (Butow et al., 1994). The second elected to use a single doctor because of the congruence between the doctors' views on patient participation and the objectives of the experimental intervention (Frederickson & Bull, 1995), thereby increasing the chance of the intervention being successful. Two studies used statistical methods to account for any effects due to the doctors' communication style (McGee & Cegala, 1998; Cegala et al., 2000) and a third

randomised the doctors rather than the patients to limit the potential bias of the doctors' care differing with respect to the patients' group status (Hornberger et al., 1997). In studies with more than one participating doctor, the failure to examine the impact of the doctor on the intervention is problematic, because while a significant effect of the intervention may be found overall, it is possible that the intervention will be highly successful for the patients of some doctors, but not at all successful for others.

**Table 2.2. Doctors who participated in the intervention studies**

| No. | Authors | Number of doctors | Gender | Age | Speciality/Seniority | Aware of study aims | Blinded to group allocation | Differences between doctors considered |
|---|---|---|---|---|---|---|---|---|
| 1a<br>1b | Roter '77<br>Roter '84 | 2 doctors,<br>1 nurse | F | | | | Yes | No |
| 2 | Wallston ' 79 | 0 | | | | | | |
| 3 | Robinson & Whitfield ' 85 | 2 | | | General Practitioner | | | No |
| 4a<br>4b<br>4c | Greenfield et al. '85<br>Greenfield et al. '88<br>Kaplan et al. '89 | 8<br><br>19 & 37 | | | 8 fellows of faculty, 11 residents on rotation, all 37 residents or interns | Yes | Yes | No |
| 5 | Anderson '87 | 0 | | | | | | |
| 6 | Tabak '88 | 14 | | | Residents ($2^{nd}$ & $3^{rd}$ year) | | Yes | No |
| 7 | Thompson et al. '90 | 3 | | | | Yes | Yes | No |
| 8 | Lewis et al. '91 | 34 | 17 M 12 F | 29 | Residents (mean 2.2 years) | | | No |
| 9 | Butow et al. '94 | 1 | | | Oncologist | | Yes | Yes |
| 10 | Frederickson & Bull '95 | 1 | | | General Practitioner | | Yes | Yes |
| 11 | Ford et al. '95 | 5 | | | 3 consultants, 2 senior registrars | | | No |
| 12 | Street et al. ' 95 | 10 | M | | 4 medical oncologists, 2 radiation oncologists, 4 surgeons | | | No |
| 13a<br>13b | McCann & Weinman '96<br>McCann & Weinman '96 | 1 | M | 30's | General Practitioner | Yes | Yes | No |
| 14 | Hornberger et al. '97 | 10 | 8 M 2 F | 43 | 6 internal medicine, 4 family practice | | | No |
| 15 | McGee & Cegala '98 | 10 | 8 M 2 F | | Residents, ($1^{st}$, $2^{nd}$ & $3^{rd}$ year) | | Yes | Yes |
| 16 | Brown et al. '99 | 2 | | | Medical oncologists | | | No |
| 17 | Fleissig et al. '99 | 13 | | | Consultants in Dermatology Gynaecology & Orthopaedics | | | Yes |
| 18a<br>18b | Cegala et al. ' 00<br>Cegala et al '00 | 25 | 17 M 8 F | | Family practice physicians. (mean 11 years) | Yes | Yes | Yes |
| 19 | Tennstedt '00 | | | | | | | No |
| 20 | Martinali et al. ' 01 | >1 | | | Cardiologists | | | No |

## 2.4. Overview of the interventions

### 2.4.1. Aims of the interventions

All of the interventions were designed to *increase* patient participation during the consultation. The specific behaviours most frequently encouraged were question-asking, raising concerns, and requesting clarification or checking understanding (Table 2.3). In two studies, no specific behaviours were targeted. Most of the interventions were delivered immediately before the patients' appointments (Table 2.3). In five studies, interventions were delivered prior to the day of the appointment to allow patients more time to familiarise themselves with the content of the intervention (Table 2.3).

### 2.4.2. Modes of presentation

Written interventions were most common, followed by face-to-face coaching and videotape (Table 2.3). A few studies used a combination of modes. In two studies, the intervention was simultaneously directed at other participants in the consultation: either doctors (Hornberger et al., 1997) or doctors and parents (Lewis et al., 1991). Four studies compared the impact of different interventions, either using the same mode with different content (Wallston et al., 1979; Robinson & Whitfield, 1985; Anderson et al., 1987) or comparing different modes of presentation (Street et al. '95).

### 2.4.3. Duration of interventions

The duration of the interventions varied considerably, from 10-25 minutes for the video interventions to a two-hour combined face-to-face and written intervention (Table 2.3). In several studies, patients were allowed as much time as they wanted with the intervention. However, nearly half of the studies failed to report the duration of the interventions. Both the different types of interventions and their duration have practical implications, if the intention is that they will be used in routine practice.

### 2.4.4. Content of the interventions

The written interventions tended to be presented in booklet or checklist form, sometimes with instructions to write down any questions that the patient may have had. The face-to-face interventions were generally based on coaching patients in question-asking techniques and the video interventions were based on modelling techniques. Modelling was also employed in one of the face-to face interventions (Tennstedt, 2000) (Table 2.3).

**Table 2.3. Overview of intervention studies**

| No. | Authors | Behaviours Encouraged | Mode of presentation | Time of intervention delivery | Duration (minutes) | Brief description of experimental intervention |
|---|---|---|---|---|---|---|
| 1a<br>1b | Roter '77<br>Roter '84 | Question-asking | Face-to-face | Immediately pre-appointment | 10 | To work through a question-asking protocol, identifying questions patients may have concerning five main aspects of illness (aetiology, duration, severity, prevention) and treatment. |
| 2 | Wallston et al. '79 | Question-asking<br>Clarification | Video<br>Face-to-face | Immediately pre-appointment | 20-25<br>Not reported | Model expresses confusion and asks for clarification during a partially confusing presentation on symptoms, causes and consequences of hypertension. All patients participated in a live teaching session (on dietary advice); 50% were told to ask questions if confused during the session. |
| 3 | Robinson & Whitfield '85 (studies 1 & 2) | Question-asking<br>Checking Understanding | Written | Immediately pre-appointment | Not reported | One group received permission to ask questions and the other received guidance on how to check understanding. |
| 4a<br>4b<br>4c | Greenfield et al. '85<br>Greenfield et al. '88<br>Kaplan et al. '89 | Question-asking<br>Decision-making<br>Overcoming barriers | Face-to-face | Immediately pre-appointment | 20 | Using a treatment algorithm as a guide, patients read their medical records and were coached to ask questions and negotiate medical decisions with their doctors. |
| 5 | Anderson et al. '87 | Question-asking<br>Clarification<br>Raising concerns | Video | Immediately pre-appointment | 14 | Video 1. Model expresses confusion and asks for clarification during a partially confusing presentation on definitions, control, complications and medication for hypertension.<br>Video 2. Model discloses problems and concerns about hypertension, including difficulties with the regimen. |
| 6 | Tabak '88 | Question-asking | Written | Immediately pre-appointment | Self-determined | Booklet educating patients to recognise information needs and verbalise requests for |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | information. Based on 33 questions covering five areas, state of body, reasons for state of body, treatment, reasons for treatment, and impact on life. |
| 7 | Thompson et al. '90 (studies 1 & 2) | Question-asking<br>Obtaining information | Written | Immediately pre-appointment | Not reported | Patients provided with a list of possible concerns, with instructions to write down at least three questions to ask the doctor and to take the list to the appointment.<br>Note from the doctor to patient giving express permission to ask questions. |
| 8 | Lewis et al. '91 | Question-asking<br>Raising concerns<br>Decision-making<br>Active role | Video | Immediately pre-appointment | 10 (child)<br>10 (parent)<br>15 (doctor) | Children: Featured a child modelling effective communication.<br>Parent: Emphasised the importance of doctor-patient communication and fostering the child's active involvement.<br>Doctor: Presented research evidence on health consequences of doctor-patient communication and demonstrated building rapport, checking children's understanding of medical information. |
| 9 | Butow et al. '94 | Question-asking | Written | Immediately pre-appointment | Not reported | Prompt sheet with 11 items designed to encourage patient active participation in the consultation. Patients encouraged to write down specific questions and to take sheet into consultation. |
| 10 | Frederickson & Bull '95 | Raising concerns<br>Seeking information | Written | Immediately pre-appointment | Not reported | Instructions encouraging patients to think about reason for attending, problems experienced, worries etc. Patient instructed to tell the doctor all these things clearly, early on, and to ask for more information on points of interest. |
| 11 | Ford et al. '95 | No specific behaviours | Audiotape | Up to one month pre-appointment | Length of audiotape | Patients provided with an audiotape of their previous consultation (1st consultation, |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | primary bad news i.e. diagnosis, or secondary bad news i.e. unsuccessful initial treatment), to take home and listen to as many times as they wished. |
| 12 | Street et al. '95 | Question-asking<br>Raising concerns<br>Expressing opinions | Multimedia<br>Written | Immediately pre-appointment | 35-40<br>15-20 | Interactive programme consisting of text, graphics, audio narration, music, and video clips. Programme divided into four sections, introduction, understanding the problem, treatment options and the experiences of other women.<br>Brochure, based on the above, conveying the same message. |
| 13a<br>13b | McCann & Weinman '96<br>McCann & Weinman '96 | Raising concerns | Written | Immediately pre-appointment | Not reported | Leaflet asking patients to identify their problems, think about the causes, treatment etc. and provided space for the patient to write down their ideas and then voice these concerns during the consultation and to ask questions about diagnosis. |
| 14 | Hornberger et al. '97 | Raising concerns | Written | Immediately pre-appointment | Not reported | Patients completed a 25 item questionnaire containing five categories of concerns, desire for medical information, psychosocial assistance, therapeutic listening, general health advice and biomedical treatments. |
| 15 | McGee & Cegala '98 | Question-asking<br>Information-seeking and verifying | Face-to-face | Immediately pre-appointment | Not reported | Patients presented with information aimed at improving their understanding of the typical communication goals relevant to the three parts of the examination (history-taking, examination, conclusion). It was stressed that patients should become the information seeker and doctor information provider. |
| 16 | Brown et al. '99 | Question-asking | Written<br>Face-to-face | Immediately pre-appointment | Not reported<br>Not reported | Prompt sheet, based on 17 frequently asked questions by patients.<br>Coaching based on discussion about the |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | importance of question-asking, generating questions, comparison of questions with the prompt sheet and adding new questions. Exploration of benefits and barriers to question asking, and question-asking rehearsed. |
| 17 | Fleissig et al. '99 | Question-asking | Written | 2 weeks pre-appointment | Self-determined | A help card and an information letter to help patients prepare and prioritise questions to ask in consultation covering patients' condition (7 items), tests and treatment (12 items) other (4 items) |
| 18a<br>18b | Cegala et al. '00<br>Cegala et al. '00 | Information-seeking and verifying<br>Information-provision | Written | 2-3 days pre-appointment | Self-determined | 14 page training booklet formatted like a workbook with examples and space for notes. Prompted patients to write questions on a variety of topics and to list the details of their symptoms and related medical history. Written summary of training booklet. |
| 19 | Tennstedt '00 | Active role | Face-to-face<br>Written | Up to 3 months pre-appointment | 2 hours | Group programme including modelling of both undesirable and desirable behaviours, role-playing exercises, and discussion of potentially negative effects of passive involvement. Provision of cue cards with a list of desirable active behaviours and a booklet for recording reasons for visit, medications, and questions for the doctor, with room for recording the answers. |
| 20 | Martinali et al. '01 | No specific behaviours | Written | 1 week pre-appointment | Self-determined | Frequently asked question checklist. 49 items covering 10 topics: nature of disease, physical state, medication, risk factors and lifestyle, treatment, examination, disease related problems in the family, psychosocial problems, practical matters, other problems. |

## 2.5. Effects on the process of communication

Pendleton (1983) distinguished between three types of variables in doctor-patient communication research: antecedents, process and outcome. The twenty studies considered in this review examined the effects of the interventions on the process and outcome of communication. Process variables include measures of the verbal and non-verbal interactions between the doctor and the patient. Outcome variables can be immediate, intermediate, and long-term (Pendleton, 1983). Immediate outcomes include patient satisfaction and recall, intermediate outcome variables include adherence to recommendations, and long-term outcomes include changes in health status or lifestyle.

### 2.5.1. Measures of the process of communication

In the majority of studies, the process of communication was measured using interaction analysis, usually from audiotaped recordings (Roter, 1977; Wallston et al., 1979; Robinson & Whitfield, 1985; Greenfield et al., 1985; Anderson et al., 1987; Tabak, 1988; Butow et al., 1984; Ford et al., 1995; Street et al., 1995; McCann & Weinman, 1996; Hornberger et al., 1997; Brown et al., 1999; Cegala et al., 2000), with two studies using video (Lewis et al., 1991; McGee & Cegala, 1998). Six of these used previously reported interaction analysis systems (Roter, 1977; Greenfield et al., 1985; Anderson et al., 1987; Lewis et al., 1991; Butow et al., 1994; Ford et al., 1995), with the remainder using newly devised systems (Table 2.4).

Roter (1977) developed a content analysis system for use in her own studies, this system has now been used fairly extensively in the USA, a modification of this system was used in a later study (Ford et al., 1995). The Roter Interaction Analysis System, (Roter, 1991) permits the coding of each utterance into a number of mutually exclusive content categories. These categories are subdivided into two main types of behaviours for both

doctors and patients: affective exchange (e.g. showing concern, giving reassurance, showing approval) and task focused exchange (e.g. giving information, asking questions, giving instructions - clinicians only). Then for example, the frequency of question asking in particular parts of the consultation can be examined. Another system used classifies each verbal utterance of doctors and patients as to whether it seeks to control the behaviour of the other party, to communicate information, or to convey emotion (Greenfield et al., 1985). One study (Anderson et al., 1987) principally used the Verbal Response Mode (VRM) system (Stiles et al., 1978) in conjunction with two other systems. The VRM system was derived from psycholinguistic theory and was specifically developed for the analysis of medical communications. Each verbal utterance is categorised according to the type of verbalisation it is, for example, questions or acknowledgements. A different system was used for the analysis of the videotapes (Lewis et al., 1991), these were coded according to direction, origin, and type (initiation, response, interruption) of each statement during the medical visit. One study, (Butow et al., 1994), used a computerised system for analysing their audiotapes (CT-LOGIT) (Butow, Dunn, Tattershall & Jones, 1995). This analysis provides an objective record of timed events coded by source (doctor, patient or third party), process (Open and closed questions, initiated statements and responses to questions) and content category (diagnosis, prognosis, treatment, medical history and presenting symptoms, other medical matters, social matters and other). Additionally, they used visual analogue scales were used to rate affect in the patient (negative-positive, anxious-relaxed, hostile friendly) and the doctor (authoritative-affilliative, anxious-relaxed, hostile friendly).

The use of different systems made comparisons of results across studies difficult, particularly when the reliability of the measures had not been established. Furthermore, studies using new measures were less likely to examine inter-rater reliability than

studies using previously reported methods, which is a serious methodological flaw. Researchers coding the interactions between doctors and patients were reported to be blinded to group allocation in only six of the studies (Greenfield et al., 1985; Anderson et al., 1987; Tabak, 1988; Lewis et al., 1991; McCann & Weinman, 1996; Cegala et al., 2000), leaving the remaining studies open to the possibility of bias (Table 2.4).

The interaction analysis systems were used to examine a wide range of communicative behaviours, measuring frequency, duration and ratios (e.g. patient to doctor behaviours). The most commonly measured variable was patient question-asking. However, there was otherwise little consistency in the measures used.

In several of the studies (Thompson et al., 1990; Frederickson & Bull, 1995; Fleissig et al., 1999; Tennstedt, 2000; Martinali et al., 2001), the process of communication was assessed by obtaining patients' or doctors' perceptions of the consultation, and this was often the only measure of the process of communication (Table 2.4). None of the studies using perceptions as a measure of process attempted to establish the reliability or validity of the criteria used. The sole use of subjective perceptions as an index of the process of communication is problematic, as subjective perceptions and behavioural measures have been found to correlate poorly (Street et al., 1995; Street, 1992[a]).

Nearly half of the studies measured only one or two categories of communicative behaviour, thus failing to take the opportunity to make use of the richness of the data available. Five studies measured ten or more categories of communicative behaviour, although these figures are approximate, as some papers had hierarchies of criteria (Roter, 1977; Greenfield et al., 1985; Lewis et al., 1991; Butow et al., 1994; McGee & Cegala, 1998) (Table 2.4).

**Table 2.4. Measures of the process of communication**

| No | 1st Author & year | Source of measure | Mode of analysis* | Inter-rater reliability‡ | Coder blinding | Number of communication criteria § |
|---|---|---|---|---|---|---|
| 1a,b | Roter '77, '84 | Roter (1977) | Audio | yes | no | 23 |
| 2 | Wallston et al. '79 | Authors' own | Audio | no | no | 2 |
| 3 | Robinson & Whitfield '85 | Authors' own | Audio | no | no | 1 |
| 4a<br>4b<br>4c | Greenfield et al. '85<br>Greenfield et al. '88<br>Kaplan et al. '89 | Adler & Enlow (1966)<br>Adler, Ware, Enlow, (1970) | Audio | (yes) | yes | 5-11 |
| 5 | Anderson et al. '87 | Stiles (1978); Bales (1950); Borgatta (1962) | Audio | yes | yes | 6 |
| 6 | Tabak '88 | Authors' own | Audio | no | yes | 1 |
| 7 | Thompson et al. '90 | Authors' own | Dr, Pt | no | no | 1 |
| 8 | Lewis et al. '91 | Pantell, Stewart, Dias, Wells, Ross (1982) | Video | yes | yes | 192 |
| 9 | Butow et al '94 | Taylor, Dunn, Beenie (1991) | Audio | (yes) | no | 10 |
| 10 | Frederickson & Bull '95 | Authors' own | Dr | no | no | 1 |
| 11 | Ford et al. '95 | Roter (1991) | Audio | yes | no | 8 |
| 12 | Street et al. '95 | Authors' own<br>Authors' own | Audio<br>Pt | yes<br>yes | no | 5<br>3 |
| 13a,b | McCann & Weinman '96 | Authors' own | Audio | no | yes | 2 |
| 14 | Hornberger et al '97 | Authors' own<br>Authors' own | Audio<br>Pt | yes<br>no | no | 2<br>1 |
| 15 | McGee & Cegala '98 | Authors' own | Video | yes | no | 10 |
| 16 | Brown et al '99 | Authors' own | Audio | no | no | 7 |
| 17 | Fleissig et al. '99 | Authors' own | Pt | no | no | 1 |
| 18a,b | Cegala et al '00 | Authors' own | Audio | yes | yes | 4 |
| 19 | Tennstedt '00 | Authors' own | Pt | no | no | 3 |
| 20 | Martinali et al '01 | Authors' own | Pt | no | no | 1 |

**Key** * audio = ratings from audiotape, video = ratings from videotape, Dr = doctor rating, Pt = patient rating

‡ no indicates that the inter-rater reliability was not examined or not reported, (yes) indicates that raters were trained up to a required level beforehand

§ These figures are approximate, as some papers had hierarchies of criteria.

### 2.5.2. The impact of the interventions on the process of communication

Although the studies used different measures of patient participation, overall it was clear that the interventions had the effect of encouraging patients to be more active in their consultations (Table 2.5). Out of sixteen studies that examined variables related to patient participation, ten reported a significant increase and five reported a non-significant increase. Broken down by mode of presentation, all but one of the six face-to-face interventions reported a significant increase in overall participation (Roter, 1977; Wallston et al., 1979; Greenfield et al., 1985; McGee & Cegala, 1998; Brown et al., 1999), and all of the video interventions reported significant increases (Wallston et al., 1979; Anderson et al., 1987; Lewis et al., 1991). However, of the ten written interventions, only two reported a significant increase (Robinson & Whitfield, 1985; Cegala et al., 2000).

Question-asking was the most frequently targeted specific behaviour, with equal numbers of studies reporting significant increases and non-significant trends (Table 2.5). Significant increases in requests for clarification were more consistently reported, raising the possibility that patients perceived it as less threatening to increase their contribution based on the information that the doctor was providing, rather than to ask spontaneous questions.

The range of question-asking was low in many studies, with a range of 0-7% questions per consultation reported for control groups and 0-9% for intervention groups (Roter, 1977; Butow et al., 1994; Ford et al., 1995). Differences among the studies may have been related to the criteria used for question-asking. For example, one study (Wallston et al., 1979) described clarifications as being analogous to question-asking, other studies (McGee & Cegala, 1998; Cegala et al., 2000) used the term information verifying. One

study (McGee & Cegala, 1998) that included direct and indirect questions, found that patients asked more questions than those reported in some of other studies. Two studies reported their results in percentage terms, with both relating to the patients who produced at least one question or asked for clarification of at least one piece of information (Robinson & Whitfield, 1985; Ford et al., 1995) (Table 2.5).

A number of studies examined question-asking in relationship to specific topics under discussion. One study reported that the experimental group asked more questions in the areas of aetiology, diagnosis, prognosis, medication, diet, miscellaneous, physical activity, and non-medical, but the two experimental groups did not differ in the area of prevention (Roter, 1977). Another study found that the highest number of questions was related to treatment over the other categories of diagnosis, prognosis, history/presenting symptoms, other medical matters and social matters (Butow et al., 1994) and another found a significant increase in the area of diagnostic tests, but not for any other matters (Brown et al., 1999). Two other studies found that there was a significant increase in clarifications and question-asking on medical topics (McGee & Cegala, 1998; Cegala et al., 2000).

Two of the three studies that used video as the medium for presenting the intervention appeared to produce the greatest number of clarifications in the experimental groups (Wallston et al., 1979; Anderson et al., 1987), but the highest group mean for question-asking was for a written intervention where the mean number of questions asked was 16.3 (Brown et al., 1999). In this particular intervention, the focus was entirely on question asking.

Six studies compared the effects of different interventions. One found that instructing patients to ask questions most effective, followed by a modelling video (Wallston et al., 1979), and another found that guidance in checking understanding was more effective than giving permission to ask questions (Robinson & Whitfield, 1985). Other findings indicated that modelling of requesting clarification was more effective than modelling of raising concerns (Anderson et al., 1987). A further study (Brown et al., 1999) found that while a question prompt sheet resulted in increased question-asking behaviour, adding face-to-face coaching did not encourage further question-asking. Two studies found no differences between their interventions, one comparing two similar written interventions (Thompson et al., 1990) and one comparing written and multi-media presentations of the same information (Street et al., 1995).

Some other interesting findings were also reported. One study found that the experimental groups asked their first questions faster (Wallston et al., 1979), with another two reporting that experimental group verbalised significantly more than the other groups (Greenfield et al., 1985; Anderson et al., 1987) and in former, the investigators found that experimental patients were more controlling, and uttered more than their doctors (Greenfield et al., 1985). These findings lead to the suggestion that the interventions would appear to encourage more verbal activity even if they do not result in increased question asking.

Anderson & Sharpe (1991) suggested that future intervention studies should be expected to extend assessments beyond question-asking behaviour, but there is little evidence that investigators have broadened the range of communicative behaviours under consideration and question-asking in its various guises still predominates.

Increasing patient participation might be expected to significantly lengthen the consultation, an outcome that would not generally be welcomed by doctors. However, the evidence suggested that this concern is unwarranted. In five of the seven studies that considered this, increasing patient participation did not result in an increase in consultation length, although of the two studies that did report an increase in consultation length (McCann & Weinman, 1986; Hornberger et al., 1997) the latter reported that the consultations were 34% (6.8 minutes) longer (Table 2.5).

Although the aim of the interventions was to increase patient participation, there was also evidence that the consultation could be modified in other ways. In one study where the intervention consisted of giving patients an audiotape of their consultation (Ford et al., 1995), a significant *reduction* was found in patients' subsequent requests for information that had been given during that consultation. In these circumstances this type of approach appeared to be helpful in facilitating patients' requests for the clarification of previously given information, allowing complex information to be re-absorbed as patients may have been too distressed for it to be properly digested initially.

Two studies considered the impact of the intervention on expressions of affect during the consultation. In one study (Roter, 1977), patients who had received the intervention were rated by independent observers as more anxious and angry and their doctors as more matter-of-fact, angry, and less sympathetic. This suggested that increased patient participation was uncomfortable for both parties, raising a concern that although the intervention may have been effective, the consequences were detrimental. In a further study (Greenfield et al., 1985; Kaplan et al., 1989) the intervention resulted in significantly increased displays of affect from doctors and patients, although the only detail provided about this was that this included both positive and negative emotions.

The impact of the interventions on doctors' behaviour was examined in three further studies, two of which found significant increases in the encouragement doctors gave to patients to ask questions (Roter, 1977; Lewis et al., 1991), and the third finding that experimental group consultations were more likely to be rated by the doctor as a 'good consultation' (Frederickson & Bull, 1995).

**Table 2.5. Impact of interventions on the process of communication**

| No. | Authors | Patient participation | Patient question asking | Number of questions asked | Patient clarification | Number of clarifications | Interview length |
|---|---|---|---|---|---|---|---|
| 1a,b | Roter '77; '84 | sig ↑ | sig ↑ | E = 2.12, PC = 1.21 | = | E = 2.1, PC = 2.6 | = |
| 2 | Wallston et al. '79 | sig ↑ | | | sig ↑ | E = 13.05, C = 5.20 | |
| 3 | Robinson & Whitfield '85 | sig ↑ | sig ↑ | E1 = 68.2%, E2 = 34.3%, C = 40.7% | | | |
| 4a,b 4c | Greenfield et al. '85; '88 Kaplan et al. '89 | sig ↑ | NS ↑ | E = 5.5, C = 4 | | | = |
| 5 | Anderson et al. '87 | sig ↑ | | | sig ↑ | E1 = 11.22, E2 = 7.12, C = 5.85 | |
| 6 | Tabak '88 | NS ↑ | NS ↑ | E = 7.6, C = 5.63 | | | |
| 7 | Thompson et al. '90 (Studies 1 & 2) | NS ↑ | NS ↑ | 1. E = 4.5, C= 3.5<br>2. E1 = 5.4, E2 = 5, C = 4.9 | | | = |
| 8 | Lewis et al. '91 | sig ↑ | | | | | |
| 9 | Butow et al. '94 | = | NS ↑ | E = 1-3, C = 1-3 (median)<br>Overall mean = 5.5 | | | |
| 10 | Frederickson & Bull '95 | | | | | | |
| 11 | Ford et al. '95 | sig ↑ | = | | sig ↑ | E = 77%, C = 57% | |
| 12 | Street et al. '95 | | | | | | |
| 13a,b | McCann & Weinman '96 | NS ↑ | NS ↑ | E = 3.02, C = 2.37 | | | sig ↑ |
| 14 | Hornberger et al. '97 | | | | | | sig ↑ |
| 15 | McGee & Cegala '98 | sig ↑ | sig ↑ | E = 6.9, C = 2.10 | sig ↑ | E = 3.7, C = 1.2 | = |
| 16 | Brown et al. '99 | sig ↑ | sig ↑ | E = 14, C = 8.5 (median)<br>E group mean = 16.3 | | | |
| 17 | Fleissig et al. '99 | | | | | | |
| 18a,b | Cegala et al. '00 | sig ↑ | sig ↑ | E = 4.46, PC = 3.36, C = 3.09 | NS ↑ | E = 1.5, PC = 1.08, C = 0.83 | |
| 19 | Tennstedt '00 | NS ↑ | | | | | |
| 20 | Martinali et al. '01 | NS ↑ | | | | | = |

**Key** sig ↑ = significant increase, sig ↓ = significant decrease, = = no change, NS = non-significant change, Blank = not assessed
E = Experimental group, PC = Placebo control group, C = control group.

## 2.6. Effects on outcomes of the consultation

### 2.6.1. Measures of outcomes of the consultation

Immediate outcomes were the most commonly considered, with patient satisfaction the single most frequently examined outcome. Most of the studies used newly-devised measures of immediate outcomes or modified versions of existing scales, which raises questions about the validity and reliability, and makes comparisons among studies problematic.

Intermediate and long-term outcomes were considered in only four studies (Roter, 1977; Greenfield et al., 1985; McCann & Weinman, 1996; Cegala et al., 2000), presumably due to the resource implications of following up patients over time. Attendance was considered in three studies and one study measured adherence to both medications and behavioural treatments (Table 2.6). Perhaps the most important long-term outcome variable, disease control, was considered in only one study. The lack of emphasis on outcomes that have a clear practical importance in health care is a serious shortcoming of work in this field.

### 2.6.2. The impact of the interventions on outcomes of the consultation

The studies generally found no significant increase in patient satisfaction due to the interventions, with only two exceptions (Table 2.6). Overall, high levels of satisfaction were reported, with ceiling effects specifically reported in three studies (Thompson et al., 1990; Hornberger et al., 1997; Tennstedt, 2000). The high frequency of ceiling effects and the insensitivity of measures of satisfaction has been previously noted as an issue limiting findings on this dimension (Balogh, Simpson & Bond, 1995; Calnan, 1988). Two studies considering doctor satisfaction found no significant change (Thompson et al., 1990; Hornberger et al., 1997).

Significant improvements were found in the accuracy of patients' recall of the consultation in three of the five studies which examined this, although none of the five studies considering patients' knowledge of their illness found significant changes (Table 2.6). This discrepancy might be due to the fact that measures of recall emphasise treatment recommendations, which may be more salient to patients, but also may reflect differences in the way information about diagnosis and treatment are given in the consultation.

The aim of many of the interventions was to encourage patients to be involved in their health care. Significant increases in patients' perceptions of control over their health and preferences for an active role in their health care were found in the four studies that considered this (Table 2.6).

Only one of the five studies considering patients' perceptions of their own health or adjustment to illness found a significant improvement (Table 2.6). However, these perceptions were assessed soon after the consultation, and it could be argued that these constructs would be more appropriately measured as long-term outcomes.

Despite the evidence about increases in observable affect from the two studies mentioned above, patient and doctor self-reports about the consultation were more positive. Patient anxiety was the most commonly measured mood state, and decreases in anxiety due to the intervention were noted in three out of five studies that assessed this dimension (Table 2.6). Furthermore, no effects on doctors' satisfaction with, or perceptions of, the consultation were found in any of the studies that considered this (Thompson et al., 1990; Lewis et al., 1991; McCann & Weinman, 1996; Hornberger et al., 1997).

Although longer-term outcomes were rarely examined, results were encouraging. Significant improvements in attendance, adherence and disease control were found for three separate samples of patients with chronic conditions, where greater patient control during baseline visit was most substantially related to lower follow-up blood glucose and blood pressure readings. With the breast cancer patients', symptom experience over the course of chemotherapy was less with greater patient control, patient negative affect, and information giving by the patient (Roter, 1977; Greenfield et al., 1985; Greenfield et al., 1988; Kaplan et al., 1989; McCann & Weinman, 1996[b]; Cegala et al,. 2000[b]).

**Table 2.6. Impact of the interventions on patient outcomes**

| No. | Authors | Satisfaction | Knowledge | Recall | Response to illness | Mood | Adherence | Attendance | Disease control |
|---|---|---|---|---|---|---|---|---|---|
| 1a<br>1b | Roter '77<br>Roter '84 | sig ↓ | | | sig ↑ locus of control | | | sig ↑ short term | |
| 2 | Wallston et al. '79 | | = | | | | | | |
| 3 | Robinson & Whitfield '85 | | | sig ↑ | | | | | |
| 4a<br>4b<br>4c | Greenfield et al. '85<br>Greenfield et al. '88<br>Kaplan et al. '89 | = | = or sig ↓ | | sig ↑ preference for active role<br>sig ↑ perceived health | | | | sig improvement hypertension & diabetes |
| 5 | Anderson et al. '87 | = | = | | | | | | |
| 6 | Tabak '88 | NS ↑ | | | | | | | |
| 7 | Thompson et al. '90 | NS ↑ | | = | sig ↑ locus of control | NS ↓ anxiety | | | |
| 8 | Lewis et al. '91 | sig ↑ | | sig ↑ | sig ↑ preference for active role | = anxiety | | | |
| 9 | Butow et al. '94 | = | | = | NS adjustment | | | | |
| 10 | Frederickson & Bull '95 | | | | | | | | |
| 11 | Ford et al. '95 | | | | | | | | |
| 12 | Street et al. '95 | | = | | | NS optimism | | | |
| 13a<br>13b | McCann & Weinman '96<br>McCann & Weinman '96 | = | | | = perceived health | | | = long term | |
| 14 | Hornberger et al. '97 | = | | | = perceived health | sig ↓ anxiety,<br>sig ↓ depression | | | |
| 15 | McGee & Cegala '98 | | | sig ↑ | | | | | |
| 16 | Brown et al. '99 | = | | | NS adjustment | = anxiety | | | |
| 17 | Fleissig et al. '99 | sig ↑ | | | | | | | |
| 18a<br>18b | Cegala et al. '00<br>Cegala et al. '00 | | | | | | sig ↑ | sig ↑ | |
| 19 | Tennstedt '00 | = | | | | | | | |
| 20 | Martinali et al. '01 | NS ↑ | NS ↑ | | | sig ↓ anxiety | | | |

**Key** sig ↑ = significant increase, sig ↓ = significant decrease, = = no change, NS = non-significant change, blank = not assessed

## 2.7. Association between process and outcome variables

A few of the studies investigated the relationship between process and outcome variables. Three studies reported no significant relationship between question-asking and patient satisfaction (Tabak, 1988; Lewis et al., 1991; Brown et al., 1999). One study showed that for both groups there was a significant positive correlation between indirect questions and satisfaction, but only the control group showed a positive correlation between direct questions and satisfaction (Roter, 1984), with another showing that increased verbal expression in the experimental groups was related to increased affective satisfaction but not cognitive satisfaction (Anderson et al., 1987).

## 2.8. The influence of patient variables on the impact of the interventions

If interventions are to be used routinely to improve patients' communication with their doctors, it is important to determine not only whether interventions are successful in general and how they affect outcomes, but also whether only certain groups of patients may benefit. Only three studies considered this issue. Increases in question-asking were found to be higher for patients from social classes I and II, and increases in the length of the consultation were particularly evident in patients who were younger, male, and from social classes I and II (McCann & Weinman, 1996[a]). The studies that considered assertiveness were limited by their sampling techniques: in one study, healthy volunteers were used to represent simulated patients (Wallston et al., 1979) and in another, the sample consisted only of male patients (Anderson et al., 1987).

Three studies found that age was an important predictor variable (Butow et al., 1994; Street et al., 1995; McCann & Weinman, 1996), where younger patients engaged in more question asking behaviour both in terms of frequency and duration of question-asking.

In addition to age, one study also found that being female and being an outpatient resulted in patients asking more questions and spending longer doing so (Butow et al., 1994). Contrary to these findings, it was also found that during the second consultation, males asked significantly more questions than females (Ford et al., 1995). More highly educated patients asked more questions, produced more expressions of concern, and generally had more active communications (Street et al., 1995).

Little can therefore be concluded, except that it remains a possibility that patient characteristics can affect responses to an intervention.

### 2.9. Practical considerations

One important issue for this area of research are the financial costs of developing and implementing interventions. This is particularly relevant if the longer-term aim is for them to be used routinely. Five studies successfully used face-to-face coaching methods to increase patient participation, but these are a costly option as they are labour intensive. Multi-media and video interventions have produced successful outcomes and although relatively expensive to develop, are much lower in cost to implement as patients only need minimal supervision and explanation. Written interventions are relatively low in cost to develop and implement and were the most frequently mode used, but have been less successful in terms of increasing patient participation or satisfaction with two exceptions (Robinson & Whitfield, 1985; Cegala et al., 2000). The audiotape intervention, which resulted in an increase in overall patient participation, was simple to administer and may be a useful area for further investigation particularly as the costs involved are small.

The intended audience is important when considering the mode of intervention. Written interventions may be difficult to understand where issues of literacy may be present. Video presentations in contrast, are generally more easily understood. Giving patients an audiotape of their consultations may be useful in specific situations, such as when bad news is broken or a highly complex treatment regimen is prescribed, particularly where patients will be returning for further appointments. The multimedia intervention was used on an adult patient group whose mean age was 59, but this mode of intervention may be particularly appropriate for younger people who tend to be more familiar with computers.

### 2.10. Quality of reporting and methodological issues

The studies reviewed above clearly demonstrated that findings that are not significant are common in this area of research. In a few studies, it was difficult to determine the results of significance testing due to ambiguous reporting. Four particular problems were evident: describing non-significant trends as 'marginally significant' or 'approaching significance', implying in the summary of the study that the findings were significant, misusing the convention of asterisking significant findings in a table of results, and failing to report the results of significance testing for all relevant comparisons (Roter, 1977; Anderson et al., 1987; Thompson et al., 1990; McCann & Weinman, 1996; Hornberger et al., 1997).

Numerous studies provided information about the relationships between input, process and outcome variables in the consultation, but failed to clearly report on the impact of the intervention (Roter, 1984; Wallston et al., 1979; Greenfield et al., 1988; Kaplan et

al., 1989; Anderson et al., 1987; Tabak, 1988; Butow et al., 1994; Ford et al., 1995; Street et al., 1995; McCann & Weinman, 1996).

Few of the studies examined changes in measures from baseline to post-intervention and post-intervention, with most relying on a post-test control group design. This design is not ideal as it fails to provide evidence that any differences between experimental and control groups are a direct consequence of the intervention, because the assumption that both groups have equal baseline levels of performance is not tested. In the context of a communication intervention the collection of baseline data for certain measures, for example, anxiety, knowledge and health status as such measures would provide supporting information regarding the efficacy of the intervention.

In terms of statistical analysis several studies performed multiple correlations on the same data set (Roter, 1984; Kaplan et al., 1989; Ford et al., 1995; Street et al., 1995; McCann & Weinman, 1996[a]), thus increasing the risk of Type I errors. Only two studies reported power analyses (McCann & Weinman, 1996[a]; Brown et al., 1999). The absence of a power calculation is problematic, as the reader cannot determine whether non-significant results are a consequence of an inadequate sample size, or whether significant results (for example, correlations) are related to a very large sample size. In several studies it was difficult to ascertain the numbers of patients participating, as some investigators emphasized the number recruited rather than the number providing data (Roter, 1977; Wallston et al., 1979; Robinson & Whitfield, 1985; Ford et al., 1995) or failed to report exactly how many patients comprised the experimental and control groups (Greenfield et al., 1985; Butow et al., 1994).

It would appear that since the publication of the Anderson & Sharpe (1991) review, some of the criticisms the authors made regarding the quality of reporting and sample size have still not been adequately addressed.

Simultaneously, with considerations about the quality of reporting findings of studies included in this review, the limitations of this systematic review should also be borne in mind. The search strategy used for this review could be criticized for being too narrow as only published studies, written in English, were chosen. Although, the possibility of a narrow search could lead to publication bias, this has to be balanced against the potential unreliability of a broader strategy of attempting to explore the grey literature. However, an advantage of using the narrower search strategy is that peer reviewed journals provide some control over the quality of papers, and also make obtaining reviewed articles relatively easy for any interested reader.

### 2.11. Conclusions and directions for future research

The studies considered in this review generally demonstrated that interventions directed at patients can be successful in increasing patient participation, and that this can be achieved without an increase in consultation length. Even where the findings regarding patient participation were not statistically significant, there were trends in the expected direction. The overall increase in patient participation was most frequently assessed by examining patient question-asking or attempts to clarify information, although it has been noted that question-asking often represents only a small proportion of the amount of overall talk.

Encouraging patient participation appeared to lead to a greater sense of control and preference for a more active role in consultations in a number of studies, although the

results were less clear when considering satisfaction, knowledge, and recall. At present, partially due to the diversity of the interventions, there is insufficient evidence to draw definitive conclusions about which forms of intervention are most successful in which contexts. There was some evidence that the more intensive face-to-face interventions were more effective than written interventions and although video interventions were used in just three studies, they were all successful in increasing participation. This raises the issue about what is practical compared to what is effective, which is important if the ultimate aim is for interventions to be used routinely.

Several areas warrant further investigation. Firstly, it needs to be determined whether responses to interventions are moderated by patient characteristics, to identify which patients would derive greatest benefit from a communication intervention. Secondly, although both difficult and costly, the impact of interventions on longer-term clinical outcomes should be assessed. Thirdly, the impact of the doctors on the intervention should also be investigated as certain characteristics of the doctors or their communication style may either facilitate or impede the success of the intervention.

Studies should also take advantage of the richness of the data available from audio or videotaped recordings, given that interventions may improve patient participation or affect the consultation in more ways than simply increasing patient question-asking. The interaction between doctor and patient should also be analysed using established and objective methods.

Future research also needs to address the basic flaws evident in some of the studies reviewed here. In particular, the results of the interventions should be presented clearly, the numbers of participants in each group should be reported, and patients' prior

experience with the service should be described. The key methodological issues that need to be addressed are the inclusion of the appropriate control groups, appropriate sample size, proper use of randomisation and blinding, and the use of valid and reliable measures.

# CHAPTER 3

# AIMS AND HYPOTHESES

## 3.1. Introduction

The aims and hypotheses for this study are based on a theoretical model of the medical consultation (Pendleton, 1983) and findings from the communication intervention studies, reviewed in chapters one and two of this thesis. Aspects of the literature that relate directly to the hypotheses are briefly described below.

The evidence from the literature suggests that patients generally do want to participate more in medical consultations, particularly with regard to gaining comprehensive information about their health problem. This is in preference to greater involvement in the decision-making process. Nevertheless, while patients want information they rarely attempt to elicit the desired information from their doctors. The way in which patients communicate with doctors influences the provision of information. Patients who are more assertive, express more concerns, and ask more questions may acquire more information from doctors than do less verbally active patients (Street, 1991). More communication (defined in terms of length of interview in minutes or number of patient/provider utterances) has been shown to predict greater satisfaction (Hall et al., 1988). However, other intervention studies indicated mixed findings, with three reporting no change in interview length (Roter, 1977; Greenfield et al., 1985; Thompson et al., 1990) and two studies reporting an increase in consultation length (McCann & Weinman, 1986; Hornberger et al., 1997).

Research suggests that the way in which doctors communicate with their patients has a significant effect upon outcomes, for example, satisfaction, recall and understanding of medical information, adherence to treatment, physical functioning and health status,

coping with disease and quality of life (Ong et al., 1995). One of the most commonly measured immediate outcomes of medical consultations in the intervention studies reviewed was patient satisfaction. Studies of doctor-patient communication have demonstrated clear links between the quality of communication and patient satisfaction (Hall et al., 1988; Roter et al., 1988; Stewart, 1995). Increased question-asking, expressing concerns, and assertive utterances are associated with improved post-consultation outcomes, such as patient satisfaction and adherence (Roter & Hall, 1992; Street, 2001).

A number of intervention studies included in the systematic review assessed mood states with anxiety being the most commonly measured. Three of these were conducted before the current study (Thompson et al., 1990; Lewis et al., 1991; Hornberger et al., 1997) with two demonstrating decreases in anxiety due to the intervention (Thompson et al., 1990; Hornberger et al., 1997). The literature suggests that this may be because receipt of information promotes an understanding of health status and of health related issues, which in turn may reduce uncertainty and anxiety and lead to improved health (Waitzkin, 1985; Roter et al., 1987).

Increasing patient participation may lead to a greater sense of personal control over their health. This is relevant to the outcomes of illness and treatment, as feelings of control may affect may have an effect on preventive health behaviours and adherence to treatment recommendations. Two of the intervention studies reported significant increases in locus of control following their interventions (Roter, 1977; Thompson et al., 1990). A greater sense in control may lead to greater perceived ability to communicate with the doctor.

Five of the communication intervention studies assessed patient recall of information given during consultations (Robinson & Whitfield, 1985; Thompson et al., 1990; Lewis et al., 1991; Butow et al., 1994; McGee & Cegala., 1998) of these three reported significant increases (Robinson & Whitfield, 1985; Lewis et al., 1991; McGee & Cegala., 1998). Therefore, there is some evidence to suggest that intervening does lead to improvements in patient recall.

Patients who are more active during consultations are more likely to understand the treatment recommendations, to understand the rationale for the prescribed regimen and to experience improved medical outcomes (Rost et al., 1989). Increased patient participation may lead to greater adherence and improved health outcomes for several reasons. If patients are permitted to communicate their concerns, their lifestyle, and their priorities to the provider, the treatment plan is more likely to be appropriate and realistic for each patient (Golin et al., 1996). As patients receive more of the information they want about their health problems, they have the knowledge they need to care for their condition. In addition, as patients are more in control of the interaction during the medical encounter, they may feel empowered to carry out their treatment plans and increased participation in the doctor visit may improve their adherence by increasing their satisfaction with medical care (Golin et al., 1996).

Patients' satisfaction with their consultation appears to be closely related to their initial expectations of the consultation and their goals for the consultation (Uhlmann et al., 1984). Patients with fewer numbers of their expectations perceived as being met reported significantly lower rates of satisfaction (Williams et al., 1995).

The literature on intervention studies with patients suggests that most of the interventions have been successful in encouraging a more active role in the consultation,

and increased overall participation generally through question-asking, although some, due to poor design or reporting, were unclear. The key methodological issues that the literature raised were the need for the inclusion of the appropriate control groups, appropriate sample size, proper use of randomisation and blinding, and the use of valid and reliable measures. Furthermore, there was a need to investigate the role of individual patient characteristics on the intervention and the impact on the intervention made by the participating doctors.

This experimental study investigated whether process and outcome variables were influenced by a video intervention, and explored the relationships between the input variables, process variables, and outcome variables from the model of medical consultations described by Pendleton (1983) (Chapter 1, pp. 19-20). It also examined the impact of the doctor on the intervention and attempted to overcome the methodological problems identified in the literature.

### 3.2. Aims and hypotheses

The principal aims of this study were to develop a video intervention and to determine whether the video intervention could be successful in increasing participation in a medical interview in sample of new patients. This was to be achieved through increasing patient communication with doctors in an outpatient clinic and evaluated by examining the effects of the intervention on patient outcomes.

#### Hypotheses relating to the process of communication

Patients receiving the video intervention (experimental group patients) will:

1. Ask more questions.
2. Express more concerns and worries.

3. Make more attempts to clarify information when it has not been understood.
4. Take a more verbally active role in the consultation by talking more.
5. Have longer consultations.

**Hypotheses relating to the outcomes of communication**

Patients receiving the video intervention (experimental group patients) will:

1. Be more satisfied.
2. Exhibit less anxiety post-consultation.
3. Have a greater sense of control over their recovery.
4. Show greater perceived ability to communicate with their doctor.
5. Demonstrate a greater recall and understanding of their condition and of advice given.
6. Show greater self-reported adherence to treatment recommendations.
7. Display a greater improvement in health status four to six weeks post-consultation.
8. Patients whose expectations of the outcome of their appointment were met would be more satisfied than those whose expectations were not met.

The secondary aims of this study were to:

1. Examine the role of individual patient differences on the consultation process, the outcomes of the consultation, and the intervention. The individual patient differences of particular interest in this study were demographics, anxiety, perceived health status, sense of control over health, preference for involvement in health care and assertiveness.

2. Investigate the influence of the doctor on the consultation process, the outcomes of the consultation and the intervention. More specifically, whether the doctors facilitate or impede the patients' verbal contribution to the consultation and the effect this has on patient outcomes in the context of the intervention.

3. In addition, to identify whether individual patient differences, the experimental intervention or the doctors are the most important influences on measures of process and outcome.

As the aim of this study was to change behaviour by increasing patient participation in the consultation, the hypotheses relating to the process of communication are therefore the most important for assessing the success of the intervention. Hypotheses 1-3 relating to asking questions, expressing concerns and worries and clarifying information are related to specific verbal behaviours that the intervention aims to encourage. Hypotheses 4-5 are concerned with overall patient participation.

Of the outcome measures patient satisfaction is the most valuable for this study as research has provided evidence for a relationship between the quality of communication and patient satisfaction (Hall et al., 1988; Roter et al., 1988; Stewart, 1995) and is related to other patient outcomes examined in this study.

# CHAPTER 4

# STUDY METHODS

## 4.1. Introduction

This study investigated whether a video intervention could help facilitate patients' communication with doctors in an outpatient clinic. The design and choice of measures was determined by the aims and objectives of the study, outlined in the previous chapter. This chapter is divided into six sections:

1. Study design and overview
2. Questionnaire measures
3. Study setting
4. Procedure
5. Statistical analysis
6. Data collected

### 4.1.1. Study design

This study was an experimental design, with patients allocated to one of three groups, experimental, placebo control and control.

### 4.1.2. Study overview

All patients were required to complete a set of questionnaires before their consultation, the consultation was audiotaped, further questionnaires were completed post-consultation, and a follow-up questionnaire were completed 4-6 weeks after their initial appointment. The experimental group watched a video designed to improve their communication with the doctor. The placebo control group saw a neutral video (on eating healthily) that was not expected to have any effect on how the patient communicated with the doctor, but made the

experience of participating equal for both these groups. The control group completed the questionnaire measures but did not see any video.

### 4.2. Questionnaire measures

The choice of measures selected for this study was based on the study aims and hypotheses. Therefore, it was necessary to select suitable measures to assess patient satisfaction, anxiety, sense of control over recovery and patients' perceived ability to communicate, recall and understanding, adherence, health status and expectations. Additionally, it was essential to evaluate the experimental intervention video and assess patients' exposure to the medical profession. The individual patient differences of particular interest were demographics, anxiety, perceived health status, sense of control over health, preference for involvement in health care and assertiveness.

All of the measures were chosen on the basis that they would be easily understood by different groups of people, for example, those from different ethnic groups and those from different social and educational backgrounds. The measures were also selected for their brevity and ease of administration, partly because of only having very limited time for their completion and partly to prevent patient fatigue. Furthermore, brief measures are considered to maximise response rates, minimise response errors and unanswered questions, thereby improving the validity and comparability of results (Marteau & Bekker, 1992).

The measures were divided up for collection in three stages. Immediately pre-consultation, data was collected on patient demographics, anxiety, perceived health status and health related cognitions. Immediately post-consultation, questionnaires were completed assessing patient satisfaction, anxiety, control over recovery and perceived ability to communicate.

Four to six weeks post-consultation, recall and understanding, adherence, health status and expectations were assessed.

### 4.2.1. Pre-consultation measures

These were the measures chosen for administration to patients immediately prior to their appointment. Copies of these questionnaires can be found in appendix 5 (page 327).

### 4.2.2. Demographics

Basic demographic information was collected, this included patients' age, sex, marital status, ethnic origin, whether English was the patients' first language, number of years in full-time education and occupation (past occupation if retired).

### 4.2.3. Spielberger State-Trait Anxiety Inventory (STAI) (Short-form state scale)

(Marteau & Bekker, 1992)

The STAI short-form was chosen as it is designed for use in situations where the administration of long-form would be difficult due to problems such as shortage of time. It measures the level of anxiety reported by an individual at a given point in time. It has been found to be a sensitive indicator of change in transitory anxiety and is one of the most widely used measures of anxiety in psychological and clinical settings (Bowling, 1995). The STAI appeared to be the most suitable measure to use in these circumstances. Other measures of anxiety such as, the Hospital Anxiety and Depression Scale (Zigmond & Snaith, 1983), which consists of 14-items (7 anxiety & 7 depression) was unsuitable for use as a repeated measure on the same day, as patient responses relate to feelings experienced in the last week.

The short-form of the STAI produces scores similar to those obtained using the full 20-item scale. The reliability is acceptable (alpha = .82). It consists of six items, three anxiety-present and three anxiety-absent items that were most highly correlated with scores obtained using the full state anxiety scale. Two of the three anxiety-absent items were those identified by Spielberger to be highly sensitive to low stressors and the three anxiety-present items to be highly sensitive to high stressors (Marteau & Bekker, 1992). Scoring is on a 4-point scale ranging from 'not at all,' (scores 1) to 'very much' (scores 4). The minimum score is six, the maximum 24. Higher scores indicate greater anxiety. Scores on the anxiety absent items are reversed.

**4.2.4. Short-Form Health Survey (SF-36)** (Ware & Sherbourne, 1992)

The short-form of the SF-36 is a self-report instrument that measures the patients' perception of the current state of their own health. This general health questionnaire was designed to be relevant to everyone's health status and well-being regardless of age, disease or treatment group. It was chosen for use in this study, as it is a multi-item scale that assesses eight health dimensions plus a single item that reflects perceived change in health over the last year. Despite being comprehensive the authors suggest that the SF-36 should only take approximately 5-10 minutes to complete. The internal consistency (Cronbach's alpha) of the eight health dimensions has been found to be acceptable in a number of studies (Table 4.1.) and it has been suggested that it will become one of the standard measures (McDowell & Newell, 1996). Alternatives to the SF-36 include the Nottingham Health Profile (Hunt, 1981), which has been criticised due to floor effects, as approximately two thirds of the population record no problems on this measure (McDowell & Newell, 1996), therefore, it may not be sufficiently sensitive for use with the intended population. It has also been reported to produce results that are more skewed than the SF-

36 (Bowling, 1995). The Sickness Impact Profile was also considered (Bergner, 1981), but while comprehensive it takes 20-30 minutes to administer.

**Table 4.1. Cronbach alpha coefficients for SF-36 scales from several studies**

| Scale | Kantz et al. (1992) | McHorney et al. (1992) | Brazier et al. (1992) | Jenkinson et al. (1994) | Manual, table 8.2 (1993) |
|---|---|---|---|---|---|
| Physical functioning | 0.88 | 0.93 | 0.93 | 0.90 | 0.93 |
| Role limitation-Physical | 0.90 | 0.84 | 0.96 | 0.88 | 0.89 |
| Pain | 0.80 | 0.82 | 0.85 | 0.82 | 0.90 |
| Social functioning | 0.77 | 0.85 | 0.73 | 0.76 | 0.68 |
| Mental health | 0.82 | 0.90 | 0.95 | 0.83 | 0.84 |
| Role limitations-Emotional | 0.80 | 0.83 | 0.96 | 0.80 | 0.82 |
| Vitality | 0.88 | 0.87 | 0.96 | 0.85 | 0.86 |
| General health perceptions | 0.83 | 0.78 | 0.95 | - | 0.81 |

Reproduced from Measuring Health (McDowell & Newell, 1996).

The SF-36 consists of 36 items, with 29 of the item responses on a Likert-type scale with 3-6 levels and seven even items have a binary response set. Scores on each dimension were calculated by summing the items from each dimension and with the use of a scoring algorithm, transformed the raw scores into a scale from 0 (poor) to 100 (good health).

**Table 4.2. Dimensions of the SF-36 and guide to interpretation of scores**

| Dimension (Number of items) | Low scores | High scores |
|---|---|---|
| Physical Functioning (10) | Limited a lot in performing activities including bathing and dressing | Performs all types of physical activities without limitations due to health |
| Role Limitations due to physical problems (4) | Problems with work or other daily activities as a result of physical health | No problems with work or other daily activities due to physical health |
| Role Limitations due to emotional problems (3) | Problems with work or other daily activities as a result of emotional problems | No problems with work or other daily activities as a result of emotional problems |
| Social Functioning (2) | Extreme and frequent interference with normal social activities due to physical or emotional problems | Performs normal social activities without interference due to physical or emotional problems |
| Mental Health (5) | Feelings of nervousness and depression all the time | Feels peaceful, happy and calm all the time |
| Energy/Vitality (4) | Feels tired and worn down all the time | Feels full of energy all the time |
| Bodily Pain (2) | Severe and limiting bodily pain | No pain or limitations due to pain |
| General Health Perceptions (5) | Believe personal health is poor and likely to get worse | Believes personal health is excellent |

Adapted from Ware and Sherborne. (1992) in Jenkinson, Layte, Wright & Coulter et al., (1996)

The eight dimensions of the SF-36 were aggregated to form two component summaries one covering physical health (PCS) and the other mental health (MCS), in order to reduce the number of statistical comparisons and reduce the role of chance in hypotheses testing. These component summaries are also norm-based. This method of scoring of the SF-36 standardises the PCS and MCS, so that each has a mean of 50 and a standard deviation 10 in the UK Population. All scores above or below 50 can be interpreted as above or below the general population norm. A standard deviation of 10 makes it easier to see how far above or below the mean the score is in standard deviation units (Jenkinson, Layte, Wright & Coulter, 1996).

**4.2.5. Multidimensional Health Locus of control Scale (MHLC)** (Wallston et al., 1978)

The MHLC measures an individual's perception of who or what has control over their health. This is relevant to the outcomes of illness and treatment as feelings of control may affect may have an effect on preventive health behaviours and adherence to treatment recommendations.

The MHLC measures three dimensions of health locus of control.

A. Internality – measures the extent to which an individual believes that the locus of control for health is internal (self-determined).
B. Chance – measures the belief in chance or external factors in determining health outcomes.
C. Powerful others – measures the belief in the control over one's health of powerful others, particularly health professionals.

A high score on the internal locus of control scale (i.e. the belief that one's self can influence the outcome) would predict engagement in the specific health behaviour. High

scores on external locus of control (the belief that powerful others or chance will determine outcome) would predict a lack of engagement in the specific health behaviour. The MHLC was selected in preference to the Rotter (1966) Internal-External Locus of Control Scale because although it is the most widely used scale, it is not health specific.

The scale consists of 18 items and uses a 6-point Likert-type scale ranging from 'strongly disagree' (scores 1) through to 'strongly agree' (scores 6). The scoring range for each subscale is from 6-36. The three subscale scores are not combined into a single overall score. Higher scores on each subscale indicate stronger beliefs. The alpha reliability for is 0.68 for the Internal scale, 0.67 for Powerful Others and 0.75 for the Chance scale.

**4.2.6. Health Opinion Survey (HOS)** (Krantz, Baum & Wideman, 1980)

The HOS assesses respondents' preferences for different treatment approaches in health care, in terms of preference for information and behavioural involvement. The behavioural involvement scale is designed to assess patient preferences for instrumental involvement in their medical care and the information scale assesses respondents tendency to actively seek health-related information and to participate in treatment related decision making. An alternative measure considered was the Miller Behavioural Styles Scale (monitor/blunting) (Miller, 1987). This scale measures the tendency to seek out or avoid threat-relevant information in the context of four hypothetical stress scenarios. Although the Miller Behavioural Styles Scale and the Health Opinion Survey are conceptually similar measures of coping disposition, the former evaluates information seeking over a variety of stressful situations, whereas the latter is limited to information seeking in a medical context (Ludwick-Rosenthal & Nuefield, 1993). Therefore, the Health Opinion Survey was deemed to be the most suitable measure for this study.

The survey is comprised of 16 items. Respondents indicate whether they agree/disagree with each statement. Two subscale scores and a total score are obtained. Higher scores indicate a stronger preference for involvement. The **Information** subscale measures the desire to ask questions and wanting to be informed about medical decisions, (scores range from 0-7). The **Behavioural Involvement** subscale measures attitudes towards self-treatment and active behavioural involvement of patients in medical care,(scores range from 0-9). The internal consistency of the total scale and the two subscales as assessed by Kuder-Richardson 20 was over 0.74. Test-retest reliability was 0.74 for total score, 0.71 for behavioural involvement, 0.59 for the information subscale.

**4.2.7. Rathus Assertiveness Schedule (RAS) (Shortened)** (Wallston, Wallston, DeVellis et al., 1979)

The Rathus Assertiveness Schedule is probably the most widely used and investigated measure of assertiveness and the short 10-item form of the RAS used in this study was developed from the original RAS scale (Rathus, 1973), which consisted of 30 items. The scale has validity for predicting question-asking behaviour. There are numerous scales available for measuring assertiveness including the Wolpe-Lazarus Assertiveness Schedule (Wolpe & Lazarus, 1966), which was one of the earliest and many of the items appear in later scales. There are also the Galassi College Self-Expression Scale (Galassi & Galassi, 1974), and the Gambrill Assertion Inventory (Gambrill & Richie, 1975) but the disadvantage of these scales is they consist of 40 and 50 items respectively making them too long for use in this study. When a content analysis was performed on a number of assertiveness measures (Furnham & Henderson, 1983), the percentage of items in the RAS relating to 'initiating or maintaining conversation' was found to be higher than in the other measures. Additionally, it has been noted that investigators have found significant correlations between the RAS and behavioural performance (Williams & Stout, 1985).

Scoring is on a 6-point scale ranging from 'very characteristic', which is given a score of 6 through to 'very uncharacteristic', which is given a score of 1. Therefore the minimum score = 10 and the maximum score = 60. A total score is obtained by summing the score for each item. The alpha reliability for the 10-item scale was 0.73, which is satisfactory, with item scale correlations ranging from 0.22 to 0.66.

### 4.2.8. Post-consultation measures

These were the measures chosen for administration to patients immediately after to their appointment. Copies of these questionnaires can be found in appendix 6 (page 339).

### 4.2.9. Medical Interview Satisfaction Scale (MISS) (Wolf & Stiles, 1981)

This measure of patient satisfaction with medical interviews is the development of an earlier scale of the same name by Wolf, Putnam, James & Stiles, (1978) and assesses patients' perceptions of a specific medical interview, rather than a measure of satisfaction in general. Additionally, the previous version of this scale showed both significant and systematic relationships of patient satisfaction to measures of the interaction between doctor and patient, from interview transcripts (Stiles, Putnam, James & Wolf, 1979: Stiles, Putnam, Wolf & James, 1979). The most widely used satisfaction measure is probably the Patient Satisfaction Questionnaire PSQ II (Ware, Snyder, Wright & Davies, 1983) and the PSQ III (Marshall, Hays, Sherbourne & Wells, 1993), a 3rd generation measure developed for the Medical Outcomes Study. However, although consisting of 50 items, it was found to have only 5 items specifically related to communication, with other questions relating to interpersonal manner (7 items), technical competence (10 items), time spent with doctor, (2 items), financial aspects and access to care (12 items). However, the biggest drawback to this measure was that it was not visit specific. Other measures assessed for their suitability was the Consultation Satisfaction Questionnaire CSQ (Baker, 1990) which is very brief

consisting of just 18 items, and like the MISS was designed to assess specific medical encounters, but did not have the advantage of containing any questions relating to the patients intentions to adhere to treatment recommendations, which the MISS does. The CSQ has been found to be comparable to the MISS but neither has been found to be superior to each other in terms of their psychometric properties (Kinnersley, Scott, Peters, Harvey & Hackett, 1966). A final measure considered was the Patient Reactions Assessment (Galassi, Schanberg & Ware, 1992) this is a brief measure of the quality of the patient-provider medical relationship. It consists of 15 items divided into three scales designed to measure the patients' perceived qualities of information received, affect and patients' ability to initiate communication. However, it was felt that this measure was too brief, and although visit specific has not been used as widely as the MISS. The greatest advantage that the MISS has over both these measures is it has been far more extensively used making comparisons across other studies more straightforward.

The scale consists of four partially independent subscales (Rapport -10 items, Distress Relief-11 items, Communication Comfort-4 items and Compliance Intent-4 items). In this version of the MISS scoring is now on a seven rather than a five point scale, and while the distribution of responses showed that most patients were satisfied the skewness was less than found using other measures of satisfaction (Wolf & Stiles, 1981). Scores range from 'very strongly agree' (scores 7) to 'very strongly disagree' (scores 1). Positive and negative item wordings are balanced and are reversed to reflect this so that a higher score indicates greater satisfaction. Scores range from a minimum of 29 to a maximum of 203. Cronbach's alpha reliability for the entire scale is .94. The alphas for the subscales are Rapport 0.9, Distress relief 0.91, Communication comfort 0.77, and Compliance intent 0.75.

**4.2.10. Recovery Locus of Control Scale (RLOC)** (Partridge & Johnston, 1989)

This scale provides a measure of the internality/externality of the respondent's perceptions of control over his/her recovery. It was developed because the existing Multidimensional Health Locus of Control Scale focuses on preventive health behaviours and therefore makes it unsuitable for investigating control over existing physical disability. Physical disability for the purpose of developing the scale was defined as 'any restriction or lack of ability to perform an activity in the manner or within the range considered normal for a human being' (Partridge & Johnston, 1989). The results of the developmental work on this measure supported previous work by showing that coping by those with more internal beliefs is more adaptive in stressful situations and, in particular, that the level of internal LOC may predict better health outcomes in patients with physical disabilities. No other comparable measures were found and although this measure was primarily designed for use with patients who have physical disabilities, the definition of physical disabilities was broad and therefore considered suitable for use in this study.

The RLOC is a nine-item scale with five items worded to reflect internal beliefs and four to reflect external beliefs .Scoring is on a five-point scale ranging from 'strongly disagree' (scores 1) through to 'strongly agree' (scores 5), with some items requiring reversal. The minimum score is 9 and the maximum is 45. A low score indicates a strong external locus of control and a high score indicates a strong internal locus of control. Internal consistency was evaluated using item-subscale correlations. The internal items correlated significantly with the internal mean for these items (range 0.49 to 0.75). The external items correlated significantly with the external mean for these items (range 0.49 to 0.80). The means for internal and external items also correlated -0.79.

### 4.2.11. Spielberger State-Trait Anxiety Inventory (STAI) (Short-form) (Marteau & Bekker, 1992)

This was the same questionnaire used in the pre-consultation assessment, to measure any changes in anxiety between pre- and post-consultation.

### 4.2.12. Perception of communication

This four-item questionnaire was designed for this study, to measures patients' perceptions of how well they thought they were able to relate to the doctor. The items related directly to four main points made in the experimental video. 1) I felt I understood what the doctor had said. 2) I was able to ask questions that were important to me. 3) I was able to express my concerns and feelings. 4) I was able to go over any points again if I wanted to.

Scoring is on a five-point scale ranging from 'strongly disagree' (scores 1) through to 'strongly agree' (scores 5). Scores range from 4-20 with higher scores indicating a better perceived relationship.

### 4.2.13. Video evaluation

This short questionnaire for the experimental group is closely related to the perception of communication questionnaire and the experimental video. It measures the extent to which the experimental group patient believes the video influenced the way that they communicated with the doctor. 1) I felt the video helped me understand what the doctor had said. 2) I felt the video helped me ask the questions that were important to me. 3) I felt the video helped me express my concerns and feelings. 4) I felt that the video helped me to remind myself of what the doctor had said. Scoring is on a five-point scale ranging from 'strongly disagree' (scores 1) through to 'strongly agree' (scores 5). Scores range from 4-20

with higher scores indicating that the video was effective in helping them to communicate with the doctor.

### 4.2.14. Consultation history

Patients were asked three questions relating to their exposure to the medical profession. They were asked how many times they had attended outpatient clinics, how many times they had visited their GP in the last year and how many times they had been hospital inpatients. Therefore, higher overall scores indicate greater experience with health professionals.

### 4.2.15. Follow-up measures

These were the measures chosen for administration to patients 4-6 weeks after their appointment. A copy of this questionnaire can be found in appendix 7 (page 348).

### 4.2.16. Follow–up questionnaire

The follow-up questionnaire was designed for use in this study with the exception of the two sub-scales that were included from the SF-36 (Ware & Sherbourne, 1992). The purpose of this follow-up questionnaire was to gather additional information about the effects of the intervention on the outcomes of the consultation. There was no single measure currently available that assessed all or most of the outcomes of interest. The questionnaire was intended to be brief as the questionnaires for administration on the day of the consultation are lengthy and to burden patients with another substantial questionnaire would be unwarranted. In addition, some of this information could not be collected immediately post-consultation, as there needed to be a period of time between the consultation and the provision of the information required. The questionnaire consists of 13 sections, some with sub-divisions. This questionnaire assesses outcomes of the consultation in terms of

diagnosis and referral, recall and understanding, adherence to treatment recommendations, receipt of information, understanding of information, reassurance, and whether patients' expectations of their appointment were met. The final two items are subscales from the SF-36 (Ware & Sherbourne, 1992), Role Limitation due to physical health problems and the Mental Health sub-scale. These particular domains were chosen for inclusion in the questionnaire either because they are established outcomes of the doctor-patient interaction, for example recall and understanding, adherence, health outcomes or in the case of expectations because of the association with patient satisfaction.

Previous intervention studies assessed patient recall post-consultation using structured interviews, open-ended questioning and prompting, for example, to encourage patients to provide specific information about medications, dosage and how and when to take it. These interviews were either conducted face-to-face or over the telephone and audiotaped so that information provided by the patients was compared with information given by the doctor during the original consultation obtained from transcripts (Lewis et al., 1991; Robinson & Whitfield 1985; McGee & Cegala, 2000; Butow et al., 1994). It was considered that this method was too unwieldy and that prompting recall may possibly contaminate true recall. Consequently, it was decided that it was felt appropriate to simply ask the patient to write down what they recalled about their diagnosis. The first item on the questionnaire consists of three parts. The first asks whether the patients were told what their health problem was; this simply required a Yes/No response. The second part only needed completing if the response to part one was 'Yes', they were then asked to circle whether is was a cardiac problem or another health problem. The third part asked patients to write down what the doctor said the problem was. These statements were then compared with what the doctor actually did say with information extracted from the transcripts of the consultations. The degree of concordance between the patients' statements and what the doctor actually did

say were then rated on a five-point scale. A score of five was given for an exact match either using exactly the same words or other words meaning the same thing. A score of four was given for a close match, three for a partial match. A score of two was given for an incongruent statement and a score of one for a statement that was clearly wrong. Another researcher also scored the degree of matching between the transcripts and the patient statements and inter-rater agreement was reached for 96% of statements and the remaining 4% agreed on after discussion. Two further questions enquired about whether the patients were sent for further tests and whether they were referred back to their GP. These required a Yes/No response. Recall of medications was not required as the patients are in possession of their drugs but recall of other health recommendations was requested. This was scored on a three point scale with a score of one equalling no recommendations remembered, two equalled some of the recommendations recalled and three equalled all recommendations recalled.

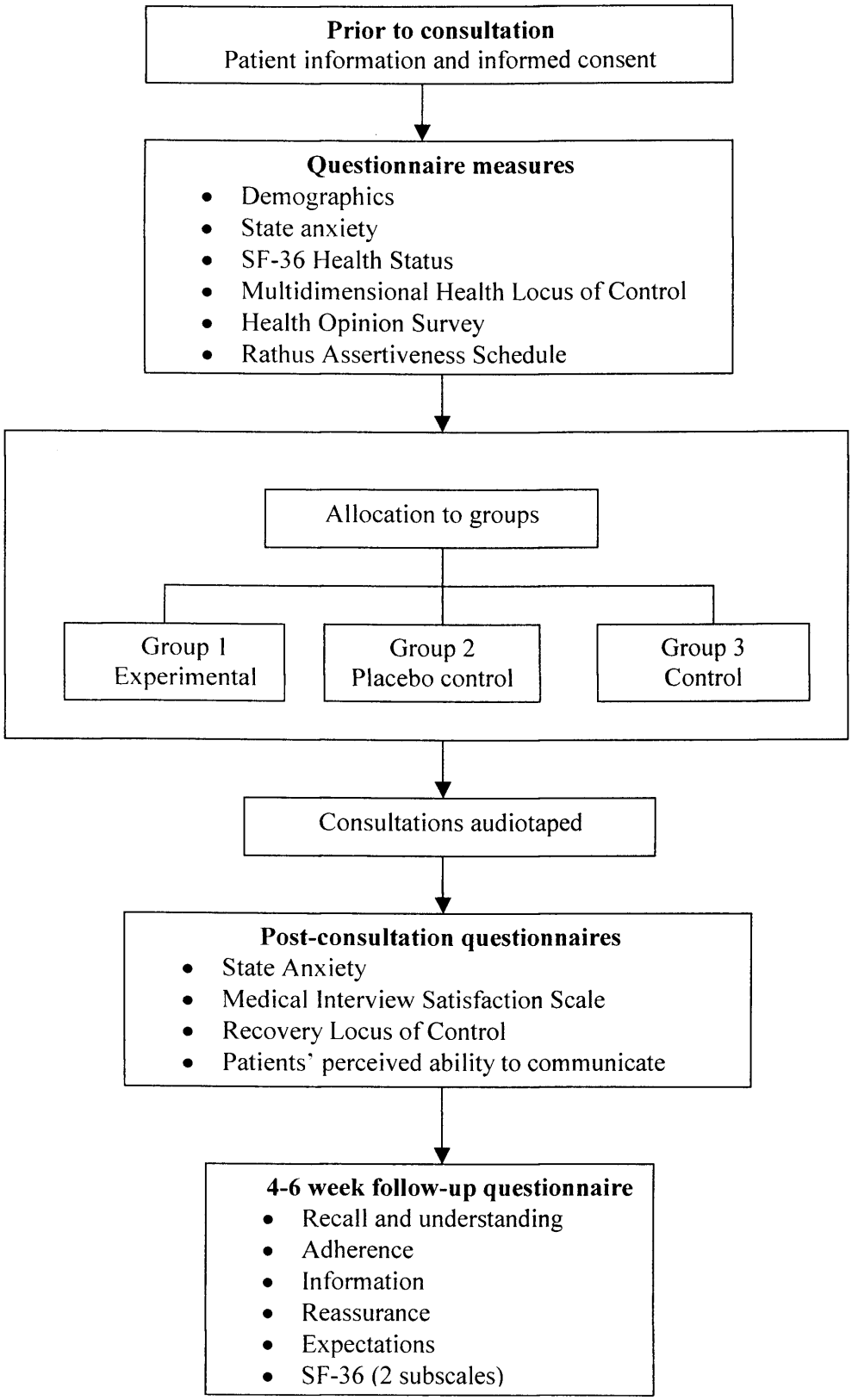
Patients were asked whether any recommendations were made about medications and other health behaviours, these required Yes/No responses. If the response was 'Yes' patients were asked to write down what they were. Adherence to recommendations was measured by asking to what extent they had been able to take each medication or follow any health recommendation. The responses were scored on a five point scale ranging from 'not at all', which was given a score of 1 to 'all of the time', which was given a score of 5. A short 4-item measure of adherence was considered but not selected for use in this study because the scale was developed to facilitate the identification and addressing of barriers to adequate adherence (Morisky, Green & Levine, 1986). In this study, it was only intended to measure whether experimental group patients were more adherent to recommendations than patients in the control groups were.

Information, understanding and reassurance were assessed using single question for each. Responses were scored for each of the three questions on a five point scale ranging from 1-5 with 1 indicating the lowest possible score and 5 the highest. Patients were asked whether they felt they were given enough information at the clinic, to what extent they felt they understood the information that they received and how reassured they felt about their health problems after their appointment.

Expectations about the outcomes of the consultations are related to patient satisfaction. These were assessed by asking whether the outcome of their appointment was what they expected. This question has a Yes/No response format. If the response was 'No' they were invited to write down what they did expect the outcome to be.

Two subscales from the SF-36 were selected for further administration, as the entire questionnaire was considered too lengthy. However, these two subscales reflect two important aspects of general health status, Role Limitations due to physical health problems and Mental Health. Role Limitations – Physical is Q4 on the main questionnaire and consists of 4 items with a Yes/No response for each. The Mental Health subscale consists of items B,C,D,F & H from Q.9 of the SF-36. A full description of the SF-36 is provided earlier in this chapter (page 102).

**Figure 4.1. Experimental protocol**



### 4.3. Study setting

A hospital outpatient clinic was chosen in preference to other settings for conducting this study for several reasons. It was important that the patients did not have a pre-existing relationship with the doctor as this would influence the communication taking place, so there was a requirement for a sufficient number of patients that had not met their doctor before. This ruled out general practice because it was more likely that GPs would be seeing many more established patients than they would new patients. Hospital inpatients were considered unsuitable, as they may be too ill or unable/unwilling to participate. It was also necessary to locate a clinic with sufficient numbers of new patients in preference to those returning with chronic conditions in order to complete the study within a reasonable period of time. The cardiology department at a local hospital in London was found to be amenable to conducting a study there and satisfied all the necessary criteria.

### 4.4. Procedure

#### 4.4.1. Ethical approval

Ethical approval was sought and approved by the hospital's ethics committee for the pilot study. They were contacted again with regard to this study and they informed us that no further application was required for the implementation of this study.

#### 4.4.2. Patient selection

The participants selected for this study were patients due to attend the cardiology outpatient clinic for the first time. New patients to the clinic were identified using the hospital Patient Administration System (PAS). The PAS system provided details of the patients' names, addresses, telephone numbers, appointment time, consultant, and details of any previous appointments at the hospital.

### 4.4.3. Inclusion/exclusion criteria

In the first instance, any new patient who had not attended the cardiology outpatient clinic or met any of the clinic consultants previously were eligible for recruitment into the study.

Exceptions:

- Patients under the age of eighteen.
- Patients who had concurrent health problems and were being seen in other outpatient departments.
- Patients whose appointments were scheduled at such a time that if they agreed to participate it would necessitate their arrival before the clinic was open.

It was unknown prior to the patients' arrival at the clinic whether they spoke English fluently. If it was found that language was a problem, they were excluded at this stage.

### 4.4.4. Patient recruitment

All suitable patients were sent a letter inviting them to participate in the study. Included with the invitation letter were an information sheet, a consent form, and a change of appointment slip. Patients were requested to sign and return the consent form in the stamped addressed envelope provided. This information was sent out two weeks prior to their appointment, so that there was sufficient time for them to consider whether or not they wanted to participate.

### 4.4.5. Allocation of patients to groups

Patients were allocated to groups consecutively. However, as the primary concern was to minimise the impact of conducting the study both on the patients and on the clinic in general, allocation of patients to groups sometimes had to be done on a pragmatic basis.

The requirements of the study resulted in a minimum time for participation for the experimental and placebo control group of thirty minutes. On a few occasions due to various circumstances; for example, patients arriving late, or being unable to complete questionnaires within twenty minutes, patients who would have been in the experimental or placebo groups were assigned to the control group to avoid delaying them for their appointment. There is a risk that this could introduce a source of bias, if any significant differences are found between the control group and the other two groups on demographic or pre-consultation measures, these patients will be withdrawn from the study. The consultants were not aware of which group patients were allocated to, and were blind to the content of the intervention video.

### 4.4.6. Allocation of patients to consultants

When GPs referring patients to the clinic specified a particular consultant, that consultant would normally see the patient. Where no particular consultant was requested, patients were seen by the consultant who could provide the earliest appointment. The consultants were not specialised, i.e. they saw a similar case mix.

### 4.4.7. Participating consultants

Initially, three consultant cardiologists agreed to participate in the study and record their interviews with patients. After approximately three months another consultant joined the study. Table 4.3. provides some basic information about the consultants in terms of gender and years of experience in practice.

**Table 4.3. Consultant characteristics**

| | Gender | Years since graduation from medical school | No of years as consultant in dept. of cardiology |
|---|---|---|---|
| Dr A | Male | 35 | 26 |
| Dr B | Female | 20 | 6 |
| Dr C | Male | 34 | 21 |
| Dr D | Female | 18 | 2 |

### 4.4.8. Collection of data

All patients were seen by one researcher (the author) to ensure uniformity in the experience of their participation in the study, particularly concerning explanation of the study and instructions for completing questionnaire measures. Patients arrived at the outpatients department approximately thirty minutes prior to their appointment. On arrival each patient was provided with a more detailed explanation of the study, the procedure, and the measures they would complete. If the patients had any questions, they were answered fully at this stage and the pre-consultation questionnaires were then completed.

Patients who had been allocated to the experimental group then watched the intervention video 'Making the most of your appointment'. Patients who had been allocated to the placebo control group watched a video entitled 'The meal ticket' that matched the intervention video in terms of length (10 minutes) and was about eating a healthy diet (National Dairy Council, 1992). Control group patients were not shown any video. Patients were given the post-consultation questionnaires and an explanation of each measure. They were provided with a stamped addressed envelope, and were requested to complete and return the questionnaire as soon as reasonably possible following their consultation. At this stage they were reminded about the 4-6 week follow up and given the option of being sent the follow-up questionnaire, or answer the questions over the telephone. Patients then returned to the waiting room.

### 4.4.9. Audio recording of consultations

In order to obtain a measure of patient participation the patients' consultation was audiotaped by the doctor using a Sony Professional Walkman (WM-D6C), which provided high quality recordings. The tape recorder was switched off for the duration of the physical

examination as this was often performed in another room. The audiotapes were subsequently transcribed in preparation for analysis.

### 4.5. Statistical methods

#### 4.5.1. Power calculation

A power calculation conducted to determine the size of the sample found that 180 patients should be recruited (60 patients per group). The dependent variable on which this was based was the number of questions asked by patients. Roter (1977) found that patients who had not been trained to communicate with their doctors asked a mean of 1.4 questions (SD 1.9). In this study the expected improvement is of at least one question per patient resulting in a mean of 2.4 questions per patient in the experimental group ($\alpha$ =0.05, power =0.85).

#### 4.5.2. Data analysis

Analysis of the data was carried out using the SPSS statistical package. Descriptive information of all the questionnaire measures was produced, including Kolmogorov-Smirnov (K-S) tests to assess the normality of the distribution. It has been suggested that tests of normality should be interpreted with caution because even with a large sample, small differences from normality may result in a small observed significance level in these tests. It has been suggested that if the sample is large and the distribution of values is not extremely far from the normal, 'you don't really have to worry' (Norušis, 1997). This was taken into account when deciding whether to perform parametric or non-parametric tests. However, in general parametric tests are robust statistical procedures, and the assumptions of both of normality and homogeneity of variance can be violated with relatively minor effects (Howell, 1997).

Chi-square and Analysis of Variance (ANOVA) (or non-parametric equivalent) was used to determine whether there are differences between the groups on any of the demographic or pre-consultation measures. ANOVA was used to assess any main effects between the groups on the post consultation measures. Interactions were examined using two-way ANOVA. Correlational and multiple regression techniques were used for investigating the factors that predict the variance in the principal outcome measures of patient satisfaction and patients' verbal behaviours during consultations. The level of significance accepted unless otherwise stated was $p < 0.05$.

### 4.6. Data collected

This section provides details of the data collected for this study.

#### 4.6.1. Patient recruitment

Data collection for this study took place between April 1999 and mid May 2000. Eight hundred and fifty letters were sent inviting patient to participate in the study. Two hundred and eighty three consent forms were returned, an initial response rate of 33.3%. Of those patients who consented, 247 participated. The discrepancy between the number of consent forms received and the number of patients who participated was largely due to clinic cancellations, patients not arriving for appointments, and a few who were unable to participate due to language barriers.

#### 4.6.2. Data

There were four sources of data collected for this study; the pre-consultation measures completed immediately prior to patients' appointment, the post-consultation questionnaires completed by patients after their appointments, follow-up questionnaires completed by patients 4-6 weeks post-appointment, and the audiotapes of the consultations.

Two hundred and forty seven patients completed the pre-consultation questionnaires, 214 patients completed the post-consultation questionnaires, a dropout rate of 13.36% (33 patients). One hundred and sixty three follow-up questionnaires were returned, representing a non-response rate at this stage of 34% (84 patients). In total 210 consultations were recorded. For a further breakdown of data collected by experimental group, see table 4.4.

**Table 4.4. Summary of data collected**

| Data collected by group | Pre-consult | Post-consult | Follow-up | Audiotapes |
|---|---|---|---|---|
| Experimental | 79 | 69 | 51 | 68 |
| Placebo control | 80 | 69 | 53 | 68 |
| Control | 88 | 76 | 65 | 74 |
| Total | 247 | 214 | 169 | 210 |

### 4.6.3. Questionnaire data exclusions

Out of the 214 sets of pre- and post-consultation questionnaires collected a further 6 patients' data was excluded from the statistical analyses because they had more than three items absent from the Medical Interview Satisfaction Scale, the principal outcome variable. A further two data sets were excluded because these patients saw a doctor that was not part of the study. Therefore, in the analyses data from 206 patients was used.

Of the 210 audiotapes, 29 were excluded because parts of the consultation were absent. This left 181 recordings, 61 of experimental group patients and 60 of each of the control groups.

### 4.6.4. Four week follow-up questionnaires

This section reports on the finding of the follow-up questionnaire that patients completed between four and six weeks post-consultation. One hundred and sixty nine of the follow-up questionnaires were returned, representing 68% of the original sample of 247. The findings in this section were based on 159 participants: 48 patients were in the experimental group,

50 placebo control, and 61 in the control group. Ten of the follow-up questionnaires were excluded from the analysis, to ensure that the data analysed and reported on in this section was from the same participants whose data was analysed in the pre- and post-consultation questionnaire analysis.

### 4.6.5. Consultants

Four consultant cardiologists participated in the study by agreeing to tape record consultations with consenting patients. Doctor A. conducted 87 interviews, Doctor B. 41, Doctor C. 45, and Doctor D. interviewed 72 patients. Overall, 134 patients were seen by the male consultants and 113 patients were seen by the female consultants.

### 4.6.6. Distribution of patients between groups and consultants

The number of patients in each group and the number of patients seen by each of the consultants is shown in table 4.5.

**Table 4.5. Number of patients by group and consultant**

| | Consultant seen | | | | |
|---|---|---|---|---|---|
| | **Dr. A** | **Dr. B** | **Dr. C** | **Dr. D** | **Row total** |
| Experimental | 21 | 12 | 11 | 22 | 66 |
| Placebo control | 24 | 13 | 10 | 20 | 67 |
| Control | 30 | 11 | 18 | 14 | 73 |
| **Column total** | 75 | 36 | 39 | 56 | 206 |

# CHAPTER 5

# THE DEVELOPMENT OF THE EXPERIMENTAL VIDEO

## 5.1. Introduction

This chapter presents the rationale for selecting a videotape presentation in preference to other methods for delivering the communication intervention. The chapter also discusses the evidence from the literature that was used to guide the content of the experimental video and describes the processes undertaken in the development of the video.

## 5.2. The choice of video for the intervention

A video presentation was selected as the medium for the communication intervention for a number of reasons. An advantage of using a video presentation is there may be a greater impact through a visual presentation, rather than through presentation of written material or face-to-face training sessions. This view has been supported by the literature and a review on the efficacy of educational videos concluded that 'video programmes consistently increase short-term knowledge; they instruct as well as and often more effectively than written materials, lectures or even individual counsellors' (Gagliano, 1988).

Visual media may also have an advantage over written material particularly in a multicultural society where English may not be the patients first language, as the spoken word is generally more easily understood than the written word, plus there are visual cues to aid comprehension. A proportion of adults in the UK are illiterate and a video presentation could overcome this problem without causing and distress or embarrassment to the recipients of the intervention.

Of all possible methods of delivering an intervention a video presentation is the least complicated as patients require minimal supervision and explanation, making it feasible for routine use in clinics in the longer term. Direct coaching sessions with groups or with individuals would be extremely expensive, time consuming and labour intensive, and would require the availability of rooms to work in, which is rarely a practical option in a hospital setting. A future consideration if the video is to be used routinely in outpatient clinics is that there is only a modest initial investment for a video recorder and television monitor. After the initial video production costs, tapes can be produced relatively cheaply, thereby providing a product tailor-made for the given patient population. In many outpatient clinics there is often a period of time between patients' arrival at the clinic and actually seeing the consultant. The introduction of a video would use the time patients spend waiting for their appointments in a way that could be of direct benefit to them.

### 5.3. Theoretical basis for the intervention video

The theoretical basis for the intervention video was adopted from social-learning theory. This is an approach to the study of social behaviour and personality and is due predominantly to the work of Albert Bandura and Robert Walters in the 1960's and 1970's. The theory is based on the role of observation and the mimicking or imitating of behaviours observed in others, usually referred to as models. In social learning theory the concept of a model in this sense plays an important role since much of socialisation is assumed to take place through the imitation of the behaviour of role model. Modelling is a procedure whereby a subject observes a model perform some behaviour and then attempts to imitate that behaviour. However, there are two important aspects of observational learning. First, the learning occurs spontaneously with no conscious efforts taken by either model or learner. Second, any learning that takes place does so

without reinforcement (Gross, 1989). In the past live modelling has been used effectively in the clinical setting but since the 1970's several investigators have attempted to determine whether 'symbolic modelling,' meaning behaviours that are illustrated in a film or a video rather than live, can also produce such effects (Gagliano, 1988). Much of the research into symbolic modelling has focussed on phobias, test anxiety, dental and medical stress and interpersonal skills. The latter has been used to facilitate assertiveness, social interaction, and the development of other appropriate social skills. An early review of the literature (Thelen, Fry, Fehrenbach & Frautschi, 1979) found that symbolic modelling was generally more effective than control conditions. Although much of the research has been directed towards children, adults can also benefit from symbolic modelling. Gatchel (1986) found decreased anxiety among highly and moderately fearful dental patients, immediately following, and six months after seeing a modelling video. The video also facilitated a behaviour change with moderately fearful patients subsequently arranging more dental appointments over the control group who watched a lecture video (Gagliano, 1988). Research conducted with parents of newborn babies who had congenital heart defects were either shown a lecture video explaining cardiac defects or a modelling video with the same information conveyed. The modelling group scored higher on knowledge tests, had fewer misconceptions about clinical signs and symptoms, and expressed fewer negative feelings towards their babies than did the group who saw the lecture videotape (Uzark, Rosenthal, Behrendt & Beckett, 1985). This demonstrated that modelling plus information not only could improve emotional response but could also assist learning (Uzark, et al., 1985). A number of researchers have used video to model parenting skills with predominantly white, educated, middle-class parents (Nay, 1975; O'Dell, Mahoney, Horton & Turner, 1979; Webster-Stratton, 1982). Results showed that there were increases in knowledge whether a group received written, lecture, or video-

modelling instruction, but the two video groups did significantly better in implementing parenting skills in a laboratory simulation. It was also found that groups that saw a film alone or with individual feedback did better in a simulated situation than groups that received individual training. The authors concluded that symbolic modelling was more practical and more effective in teaching parenting skills than was one-to-one training.

### 5.4. Rationale for the content of the video

The rationale for guiding the content of the video was based on evidence from the literature where some key problems with the doctor-patient interaction were identified. These were related to the reticence of patients to actively participate in consultations, patients' perceptions of the lack of information provided by doctors, and problems with patients' recall and understanding of information.

It has been shown that patients are often dissatisfied with both the quality and the amount of information received from doctors both in the hospital environment and in general practice (Ley, 1988). The situation is complex because even if doctors do increase the provision of information, it has been found that patients often do not understand or remember what they have been told. Some early studies conducted mainly in the 1970's showed that the percentage of information forgotten ranged from 31-71% (Ley, 1982). The problems of understanding and recall, coupled with patients' reticence in asking for information when they are unsure of what was meant, or when they want more information, has at least two main consequences. In situations where doctors wish their patients to be fully informed they will not always be successful in improving communications because what they say is often not in understandable or memorable form. This may be because information is presented in a too difficult form and patients often have their own theories about illnesses and interpret new information

within the framework of their existing ideas. Where the patient's ideas are discrepant from those of the clinician it is likely that the message received will often not be the one intended. Additionally, patients infrequently provide feedback in the form of questions, leaving doctors unaware of their faults in communicating (Ley, 1988).

As reviewed earlier, research has shown that there are at least three ways that patients can actively encourage the doctor to provide more information and this can be achieved by the patients asking questions, expressing concerns and worries, and offering opinions (Street, 1991). Several studies have demonstrated that doctors provide more information to patients who ask more rather than fewer questions (Amir, 1987; Boreham & Gibson, 1978; Greenfield et al., 1985, Roter, 1984). The expression of concerns and worries appears to be related to doctors being more interpersonally engaged with and providing more opinions to patients who were more rather than less affectively expressive. In addition, patients who endeavoured to wield some influence over the doctors' behaviour by asking questions and expressing opinions received more information from doctors than did patients who were less verbally assertive (Greenfield et al., 1985).

### 5.5. Background to the development of the intervention video

To assess the feasibility of a video intervention to improve patients' communication skills in consultations, a videotape entitled 'Make the Minutes Count', was created by a research psychologist who formerly worked in the Department of Psychiatry and Behavioural Sciences. It was this pilot video that provided the basis for the experimental video intended for use in the current study.

### 5.5.1. Description of the pilot study video

A presenter introduced the video, which was divided in to six sections. Each section described a patient communication task during the consultation. Section one was entitled 'Preparing for the consultation'. In this section, the presenter suggested a number of things, such as information or reassurance that patients might want from their doctors. The presenter proposed that patients think about what they want from the consultation and suggested preparing a list in advance. In section two, 'Saying what you would like from the consultation', patients were encouraged to think about their symptoms and what they wanted the doctor to know. During section three, 'Asking questions', it was recommended that patients should attempt to overcome inhibitions and embarrassment and ask the questions they wanted to ask for the mutual benefit of the patient and doctor. Section four 'Clarifying what the doctor has said' supported the idea that patients should clarify what the doctor was saying throughout the consultation to ensure understanding. In section five, 'Expression of feelings', it was suggested that patients express their concerns and worries. The final section, 'Summarising at the end of the consultation,' encouraged the patients to review the information given at the end of the consultation to avoid confusion or misunderstanding.

Each section was divided into two scenarios. In the first scenario the 'patient' (played by an actor demonstrated ineffective communication, and showed the consequences of this (for example, a patient not asking a question they wanted to, and then worrying afterwards). The second scenario demonstrated effective communication, with a positive consequence (for example, the patient being more satisfied with the consultation). The video concluded with the presenter saying 'There is a lot you can do to get more out of your consultation. Think now about what you would really like to get from your time with the doctor.'

### 5.6. Methods

In order to assess the feasibility of delivering the video intervention and the acceptability of the video it was evaluated by a group of patients attending the cardiology department of a London hospital. Additionally, the research team from the Unit of Health Psychology (Department of Psychiatry and Behavioural Science at University College London Medical School) was enlisted to critically evaluate the pilot video before proceeding with the development of the intervention video for this study.

#### 5.6.1. Patients' evaluation of the pilot video

Over the course of six outpatient clinics, the senior cardiologist recruited twenty patients who had attended the clinic for the first time. The patients were asked whether they were prepared to watch a short video and answer some questions. Patients were provided with an information sheet and written consent was obtained. The patients watched the video after their appointments and were asked the following questions.

1. Do you think this video would have been helpful if you had seen it before seeing the doctor?
2. Do you think that if you had seen the video before your appointment it would have changed anything?
3. What parts of the video do you think were helpful?
4. What parts of the video do you think were **not** helpful?
5. Was there anything else that you would have liked the video to cover?

These short sessions were recorded on audiotape and answers to the questions were collated. It was decided that this phase of piloting the video would continue until no new response to questions were recorded. This occurred when 14 patients had been

seen. A further six patients were seen to ensure that it would be unlikely that any new ideas would emerge.

### 5.6.2. Results – Patient group

The patients' responses to each question are described below.

**Question 1.** Do you think this video would have been helpful if you had seen it before seeing the doctor?

All twenty patients unanimously agreed that the video would have been helpful if they had seen it before their appointment. A number of patients gave further explanations as to why it would be helpful. These were because it would have helped them to overcome the fear of asking the doctor questions, be better prepared, more precise and more confident, be less likely to forget what they wanted to ask and less likely to get confused, clarify information if they were unsure of what was wrong and "kill the time while waiting."

**Question 2**. Do you think that if you had seen the video before your appointment it would have changed anything?

Five patients reported they would have asked more questions. Two reported that the video would be helpful if they did not have any experience of outpatient clinics and a further two patients reported that watching the video would have reminded them of what they wanted to say. Other suggestions raised were that it would have made them feel more at ease and that they would not leave the consultation without information they wanted.

**Question 3.** What parts of the video do you think were helpful?

Five of the patients reported that they found the entire video was helpful. Six patients commented that explaining how to ask questions was helpful. Other aspects of the video that the patients felt were helpful were explaining that it is acceptable to express worries, demonstrating patients summarising what the doctor had said, that the use of 'before' and 'after' scenarios made things clearer and obvious, demonstrating patients explaining their illness and the doctor explaining treatment (medicines), and seeing the patient making notes.

**Question 4.** What parts of the video do you think were **not** helpful?

Eight patients responded that the entire video was relevant, with six reporting that they could not think of anything that was **not** helpful. One patient commented that the video was very repetitive and did not feel that the patient communicating poorly the first time then getting it right second time was realistic.

**Question 5.** Was there anything else that you would have liked the video to cover?

Thirteen patients replied that there was nothing else the video should cover. Other suggestions were that it should explain more about additional procedures, blood and other diagnostic tests, and give reassurance that these are normal, suggest that patients take a paper and pen into consultation, suggest that doctors write down recommendations to give to the patient, be condensed, have fewer points and be more punchy.

Overall, the feedback from the patient group was very positive. They felt that the video would have been helpful particularly in the area of question asking and generally preparing for a consultation. All the patients reported enjoying watching the video even

though they saw the video after their consultation, so in practical terms it was not of any direct benefit to them for that particular outpatient visit. Consequently, the findings indicated that it was feasible to show patients a video in the cardiology outpatient clinic and that the video itself was acceptable to patients.

### 5.6.3. Research group evaluation of the pilot video

Twenty members of the research group were asked to watch the video twice. They were provided with brief written details about each section of the video and were asked to write down comments about each section of the video and any general comments they might have. On the first viewing, they were asked to concentrate on the presentation and appearance of the video. On the second viewing, they were asked to concentrate on the content of the video with particular regard to the principal objectives of the video and their effectiveness.

### 5.6.4. Presentation and appearance of pilot study video

The research group provided detailed comments on a number of aspects of the video that would need to be overcome in the new intervention video. Several issues were raised about the quality of the presentation of the pilot study video. In particular, film exposure, lighting, volume consistency and overall production. Some comments were also made about the visual presentation. These related to the musical backing track, graphics, quantity of text on screen and the background. It was also felt that more attention needed to be paid to the ratio of male to female actors and to ethnic mix of both doctors and patients.

### 5.6.5. Content of the pilot study video

The research group were satisfied with the objectives that the pilot study video was aiming to achieve, but made a number of observations. It was questioned whether it was necessary to always have a negatively modelled scenario followed by positively modelled scenario, or whether only positive modelling of desirable behaviours would be equally effective. It was felt that the aims of the video needed to be clearly stated at the beginning and summarised at the end. Generally it was thought that the video was slightly too long with too much information presented, especially at the beginning. The presenter in the pilot video suggested that patients should make a written list of issues they wished to raise, however, it was agreed that doing so presented a problem, as it would have enabled doctors to identify the experimental group patients. It was also suggested that in the new video each scenario should be set in an outpatient clinic, rather than reflecting a problem more appropriate to a GP surgery. Additionally, the video should address patients potential concerns about taking up too much of the doctors' time. Question asking could be expanded to incorporate a wider range of topics including diagnostic tests, side effects of treatment and explanations of medical jargon. Lastly, it was suggested that it might be better to avoid mentioning specific drug names, as patients may be concerned if for example, the suggested medication is different from something they have been prescribed.

## 5.7. Development of the new experimental video

On the basis of the feedback from patients and the research group, the following decisions about the new experimental video were made.

### 5.7.1. Principal aim

It was decided that all techniques and behaviours recommended to patients should aim to result in changes in patients' verbal behaviour during their outpatient consultations (for example, increased question-asking), which could be identified from audiotapes of the consultations.

### 5.7.2. Length

It was decided that the experimental video should be no longer than ten minutes in total. This should be sufficient time to get the message across without the viewer loosing interest.

### 5.7.3. Presentation and appearance of the new experimental video

The presentation and appearance of the new video should improve on the pilot video in the following ways.

- Written titles and points should be short: concise enough to be read in one glance.
- Text colour – yellow on mid to dark blue background
- Typeface – simple as possible e.g. Arial. Font should be large enough to be able to read words at a distance.
- No music during main body of video, just at the beginning and end.
- Ensure film is correctly exposed, volume is constant, and looks professional.

### 5.7.4. Actors

Professional actors were chosen to play the role of doctors and patients to ensure the production was realistic. It was decided that the actor selected to be the presenter should possess a good speaking voice with a neutral accent, have an air of authority, be around the age of forty and formally dressed. The actors required for playing the doctors and

patients needed to be more representative of society in general, with a broader ethnic mix and wide age range. In addition, equal numbers of male and female actors needed to be selected for playing the roles of doctors and patients, and should be evenly distributed throughout the new video.

### 5.7.5. Verbal style of doctors and patients

It was decided that throughout the new video a natural style of dialogue should be adopted to ensure the scenarios looked real rather than staged. The doctors should not be patronising but should sometimes show poor communication skills: e.g. not being understanding, giving inadequate explanations, rushing through a series of closed questions and not looking at the patient. Additionally, the doctors should not use medical jargon. The patients should be less grateful and unassertive than the models in the pilot video, but demonstrating a range of styles.

### 5.7.6. Settings

The background for the presenter should be as neutral as possible, either with a blank wall behind or a 'consulting room' setting in background. The consulting room settings were designed to be as close as possible to 'real life' outpatient rooms. These settings were based on photographs taken of cardiology consulting rooms. To create the feeling of a consulting room a desk was chosen in preference to the table shown in the pilot video. Medical posters and wall charts were positioned on the wall behind the desk and assorted medical paraphernalia and a telephone was placed on the desk. To add some variety seating arrangements were altered for some of the scenarios, in order to suggest different consulting rooms.

### 5.7.7. Scenarios

It was decided to replace all the GP-type scenarios with scenes more representative of outpatient issues and to replace the 'before and after' format with positive modelling scenarios. It was also decided to include one scenario in which the patient was going to be having further investigations, where the actor would model the patient asking for an explanation of what this would involve and where they would have to go. A further suggestion was to include a scenario in which the patient was not going to undergo any further investigations, but is going to go straight back to the care of the GP, perhaps with medication, or perhaps just with reassurance. Additionally, the pilot video had a scenario about a patient with angina. This was replaced as the main study was to be run in the cardiology clinic and some patients might have had this condition. It was thought that if there was scenario depicting a patient suffering from angina and there were any aspects of the symptoms or treatment differ, there might have been a risk of adding to patient anxiety.

## 5.8. Details of plans for revised video script

The title of the new intervention video was changed to '**Making the most of your appointment**.'

### 5.8.1. Introduction

The introduction stated the aim of the video and gave explanation of the format. The presenter explained that sometimes when people go to see a doctor at an outpatient clinic they don't always get the most out of their appointment, so the video would show them how to do this. The presenter also explained the value of asking questions and reassured patients about not being afraid of asking questions and not worrying about taking up the doctor's time. It was stated that it was important that the patient should be

happy with the appointment and that they understand any advice given. A further comment was added saying that the doctor is not a mind reader and relies on the patient telling the doctor what is on their mind.

### 5.8.2. New headings

The number of headings in the new video was reduced to four to simplify the presentation and make it more succinct. As each of the headings appeared on the screen they were simultaneously spoken by the presenter. The new headings were:

1. Say what your worries are.
2. Asking questions.
3. Making sure you understand (what the doctor has said).
4. Remind yourself (of what the doctor has said)

### 5.8.3. Scenarios

The scenarios for each point were designed to follow the typical sequence of the outpatient consultation to help cue the patients to be active in each of the main aspects of the consultation: history taking; diagnosis/prognosis or referring on for further investigation; discussing treatment; conclusion (NB. examination will not be included as the patients may be in a different room and this part of the consultation will not be recorded. The scenarios also addressed non-medical concerns. Therefore, scenario one tied with history taking, scenario two with giving diagnosis/prognosis and referring on for further investigation, scenario three with discussing treatment, and scenario four with the ending of a consultation.

**Scenario 1 - Say what your worries are (History-taking)**

1. This scenario began with doctor asking questions about the patient's presenting problem of recurrent headaches, using a series of closed questions, and then looked down to make some notes. Then the patient expressed concern about the potential seriousness of the condition. The doctor responded by suggesting that it was unlikely to be any more serious than migraine but would need to ask more questions and conduct an examination.
2. In the second part of the scenario the doctor confirmed the diagnosis and the patient expressed a worry about not being able to take any more time off work. The doctor subsequently reassured the patient that with medication this should not be a problem any more.

**Scenario 2 - Asking questions (Diagnosis/prognosis and referring on)**

1. The doctor stated that the patient needed further investigation for suspected ulcerative colitis. The patient then asked a question about the proposed diagnostic test. The doctor responded by providing the patient with an explanation of the proposed procedure.
2. At a subsequent appointment the doctor confirmed the diagnosis. The patient responded by asking a number of questions about both the diagnosis, prognosis and whether surgery would be necessary. The doctor answered the patient's questions and reassured the patient that surgery would not be necessary at that point in time.

**Scenario 3 - Making sure you understand (Treatment)**

The format of this scenario was kept the same as in the pilot video, as it gave a clear demonstration that people frequently do not fully understand everything they were told in the consultation at a later time.

1. In the first part of the scenario an elderly patient and their partner were discussing the appointment after returning home from the hospital. Their conversation suggested that the patient had forgotten a large proportion of the information provided.
2. The second part of the scenario reverts back to the hospital where the doctor gave the technical names for two types of arthritis and prescribed analgesics for the pain and anti-inflammatory drugs to help with the swelling. The doctor then proceeded to give instructions about when the medications should be taken. The patient in this part of the scenario then asked the doctor to explain the situation again and receives more satisfactory answers so that a fuller understanding of the situation was achieved rather than the outcome depicted in the first part of the scenario.

**Scenario 4 - Reminding yourself (ending the consultation)**

In this scenario the doctor made a long list of recommendations to a newly diagnosed diabetic patient about dietary restrictions. The patient asks if it is all right to go through the list of instructions given by the doctor, in order to remind themselves of what the doctor had said. The doctor is amenable to this suggestion and the patient repeats what the doctor said initially. In the closing stage of interview the doctor asks whether the patient had any more questions. Initially the patient appears to have no further questions but then remembers that there was something they wanted to ask.

The video ends with a closing statement and verbal summary of all the points, which are simultaneously displayed on the screen.

To end: screen goes blank followed by the final credits.

### 5.8.4. Experimental video script

Using these comprehensive revision notes as a guideline, the new video script was written and revised where necessary. Revision of the script continued until the point was reached where the most important points made by the patient group and the research team had been incorporated, and the problems associated with the previous script were eliminated. (Complete video script is in Appendix 4, page 319)

## 5.9. Video production

The video was directed and produced by Phill Doulton of Professional Role-players, who had access to studio facilities, editing suite, and a pool of available actors.

### 5.9.1. Selection of actors for video

As previously decided, the actor needed for the role of presenter needed to be played by someone who possessed an air of authority and had a doctor-like manner. An actor was available who met these criteria, having played the role of a consultant in a well-known medical drama. The genders of the actors chosen for each scenario were randomly determined by the flip of a coin. Two doctors were male, two female, three patients were female and one male, and there was one male spouse/friend. From the available pool of actors, we selected one Asian actor to play the role of a doctor, and an Afro-Caribbean actor to be a patient, in an attempt to reflect a more representative ethnic mix than the pilot video portrayed.

The actors selected for each scenario were determined largely by the nature of the health problem being presented, for example, the patient with osteoarthritis needed to be older than for any of the other health problems and the patient with diabetes was required to be middle aged. It was also felt that the actors selected to play the doctors should not appear too young.

### 5.9.2. Filming the video

Filming the video took place over a period of two days. This allowed sufficient time for the filming of several versions of each scenario and of the presenter so that the best 'take' could be selected for the finished product. Subsequently to this, a 'rough cut' of the video was produced and some editing suggestions were made before production of the final version.

### 5.9.3. Summary of the experimental video

The final version of the video as planned was ten minutes long and incorporated four main scenarios, with each of the points designed to follow the typical sequence of the outpatient consultation to help cue the patients to be active in each of the main areas.

1. Say what your worries are (history-taking).
2. Asking questions (diagnosis/prognosis and referring on).
3. Making sure you understand (what the doctor has said) (treatment).
4. Remind yourself (of what the doctor has said) (ending the consultation).

# CHAPTER 6

# INTERACTION ANALYSIS METHODS

## 6.1. Introduction

This chapter describes the method used in the measurement of verbal behaviour of both patients and doctors in the consultations. The doctor-patient consultations were audio-taped and these tapes were then transcribed verbatim. The method selected for the analysis of these consultations was the Taxonomy of Verbal Response Modes (Stiles, 1992).

## 6.2. Selection of the method of interaction analysis

There are a number of methods of interaction analysis, in a review of such methods from 1985 to 1996, Boon and Stewart (1998) identified that there were seven different types of interaction process analysis among instruments in the research category. These were the Bales' Interaction Process Analysis (Bales, 1950); Butler's Method for the Interactional Analysis of Doctor/Patient Consultations (Butler, Campion & Cox, 1992); the Cancer-Specific Interaction Analysis System (CN-LOGIT) (Butow, Dunn, Tattershall & Jones, 1995); Kaplan's Measure of Physician-Patient Communication (Kaplan, Greenfield & Ware, 1989); the Physician-Patient Inteaction Coding System (Makoul, 1992); Roter's Interaction Analysis System RIAS (Roter, 1995); and Stiles Verbal Response Modes VRM (Stiles, 1992). However, the CN-LOGIT system was ruled out because of its specificity to a particular patient group and all others except the Bales, Roter and Stiles's systems were excluded, as there was little evidence that they had been applied in more than one or two studies.

Bales' Process Analysis System focuses on ways in which the process and structure of communication among persons in a group reflect how they differentially participate in problem solving (Roter & Hall, 1989) and was originally designed for use with college students (Stiles, Putnam, Wolf & James, 1979). The Bales' scheme has been the most widely used and modified than any other method of describing the interaction between doctors and patients (Roter & Hall, 1989). Roter has built substantially on the original Bales system, firstly by coding directly from the audiotapes rather than transcripts, thereby allowing assessment of the affective qualities of the communication (Roter & Hall, 1989). Additionally, in the RIAS the classification of interaction are more finely directed towards the substance of the medical consultation than the Bales system, but generally reflect comparable categories. For instance, categories of information giving, instructions and directions, and counselling are substituted for Bales original categories of giving orientation, suggestion and opinion (Roter & Hall, 1989). In contrast Stiles' Verbal Response Modes was developed via linguistic theory. The developers of the VRM suggests that it offers a more thorough and flexible method of analysing interactions (Stiles, Putnam, Wolf & James, 1979). The taxonomic groupings were used to identify communication patterns that were related to patient satisfaction (Putnam, Stiles, Jacob & James, 1985; Stiles, Putnam, Wolf & James, 1979). These studies found that patient satisfaction was improved when patients were allowed to fully disclose their health problem in the initial stages of the interview, without being asked closed-ended questions by the doctor and when the doctor ended the consultation with information giving (Putnam, Stiles, Jacob & James 1985; Stiles, Putnam, Wolf & James, 1979).

In this study it was felt important to have an objective method of quantifying verbal behaviours, for example, question-asking. As the focus of this study was not on the

affective dimensions of the consultation that the Roter system offers the VRM system was selected as the method of choice. Additionally, the VRM system has been used in a number of doctor-patient communication studies recently making comparisons of results feasible (O'Brien & Petrie, 1996; Anderson & Hinckley, 1998; Shaikh, Knobloch & Stiles, 2001).

### 6.3. Introduction to the Verbal Response Modes (VRM)

The VRM taxonomy is a system for coding verbal behaviour that accordingly classifies and counts utterances, and provides quantitative data that can be used to identify differences in doctor-patient interviews. The VRM is described as a comprehensive, mutually exclusive, general taxonomy of verbal behaviour that occurs in conversation. The system is designed to code what people do in verbal interaction (their speech acts) rather than what they think. A full description of this coding system is provided in Stiles (1992).

There are eight VRM categories, Disclosure (D), Edification (E), Advisement (A), Confirmation (C), Question (Q), Acknowledgement (K), Interpretation (I), and Reflection (R). An Uncodable (U) category is only used for utterances that coders decide cannot be properly heard or understood. Each speech act is coded twice, once with regard to its grammatical form (literal meaning), and once with regard to its communicative intent (pragmatic meaning). Consequently, the taxonomy includes 64 possible form/intent combinations. Eight pure modes where form and intent correspond and 56 mixed modes where they differ. It is the usual practice to write the form code abbreviation first and the intent code second. The names of the eight modes are words in common usage, but in this taxonomy, the modes are defined by the application three principles and not by the colloquial or dictionary definitions of the names.

### 6.3.1. Speaker-other dichotomy

In this system each speech act is considered to have a sender and an intended recipient, Stiles (1992) refers to them as 'speaker' and 'other'. It is this speaker/other dichotomy in the communication of experience, which forms the basis of the taxonomy. Speech acts are classified according to whose experience is the topic of each act, whether or not the speaker presumes to know the other's experience, and whose viewpoint or meaning is used to understand the experience. These three classifications are the principles that are central to the application of this taxonomy.

### 6.3.2. Source of experience

Each speech act is classified according to whether it concerns the speaker's or the other's experience. The experience may be the speaker's own, for example, when a speaker reveals their own feelings, opinions, or information only known to themselves. Alternatively, it may be the other person's experience, such as when a speaker asks a question or describes the other's feelings.

### 6.3.3. Presumption about experience

In effecting speech acts, a speaker may or may not presume to know what the other's experience is, was, will or should be. Speech acts that do require such a presumption are coded as "other". In cases where the speaker only presumes to know about their own experience are coded as "speaker".

### 6.3.4. Frame of reference

The meaning that an experience has in a particular speech act has is derived from the array of associated experiences (ideas, memories, connotations etc.) that it is linked to. In the

VRM taxonomy, this is referred to as the frame of reference. Every viewpoint, way of looking at, construction or theory is considered as a frame of reference. As with the previous principles frames of reference are considered as either the speaker's or the other's, depending on whose viewpoint, schema or theory is used. Thus, viewpoints that are neutral or objective, for example, statements of fact, are classified as 'other' for frame of reference as it is shared with some or all people (Table 6.1).

**Table 6.1. The relationship between the speaker-other dichotomy and the VRM modes**

| 1. Source of Experience | 2. Presumption about experience | 3. Frame of reference | |
|---|---|---|---|
| | | Speaker (a) | Other (b) |
| **Speaker** | Speaker | Disclosure | Edification |
| | Other | Advisement | Confirmation |
| **Other** | Speaker | Question | Acknowledgement |
| | Other | Interpretation | Reflection |

In the application of the classification, the principles for determining which Verbal Response Mode a speech act actually is can be assisted by using table (6.1). For example, a speech act that is established as speaker for source of experience (Column 1), speaker for presumption about experience (Column 2) and speaker for frame of reference will be a Disclosure (Column 3a). A speech act that is other for source of experience (Column 1), speaker for presumption about the experience (Column 2) and speaker for frame of reference will be a Question (Column 3a) and so forth.

### 6.3.5. VRM intents

VRM intents concern what is meant by a speech act, regardless of how it is said. Therefore, coders are required to determine what the speaker meant in the context of what was said, this is achieved by using the three principles of classification detailed above. The following

provides a description of the eight mode intents and the examples given are from the manual (Stiles, 1992).

### 6.3.6. Disclosure (D)

Disclosures concern the speaker's experience, require no presumptions about the other's experience, and use the speaker's internal frame of reference. Disclosures reveal the speaker's private thoughts, feelings, wishes, perceptions, and intentions. A defining feature of a Disclosure is that one would need access to the speaker's private experience to determine its sincerity.

Examples: I don't know what I feel (DD). I hear what you are saying (DD). Now I'll examine your throat (DD).

### 6.3.7. Edification (E)

Edifications concern the speaker's experience, require no presumptions about the other experience, and uses a frame of reference that is shared with the other (or any other). Therefore, Edifications are statements of fact, information that in principle are public. However, Edifications do not necessarily need to be true.

Examples: It hasn't come yet (EE). The tumour is malignant (EE). He is a thoracic surgeon (EE)

### 6.3.8. Advisement (A)

Advisements concern the speaker's experience, presumes knowledge of what the other should do and think, and uses the speaker's frame of reference. As such, Advisements display the speaker's idea of what the other should do or think and attempt to guide the

other's behaviour. Advisements include directives of all kinds: commands, requests, suggestions, advice, permission, prohibition etc.

Examples: Please wash your hands (AA). Take two of these and call me in the morning (AA, AA). You should stop smoking (AA).

### 6.3.9. Confirmation (C)

Confirmations concern the speaker's experience, presume knowledge of the other's experience, and use a shared frame of reference. Therefore, confirmations compare the speaker's experience with the other's, by expressing shared ideas, memories, or beliefs, and by agreement or disagreement.

Examples: We've about exhausted that topic (CC). We both know what it's like to have to diet (CC). You and I agree (CC).

### 6.3.10. Question (Q)

Questions concern the other's experience but do not require presumption about the other's experience, and use the speaker's frame of reference. Questions, in effect are the speaker attempt to fill a gap in their own frame of reference with information or guidance provided by the other.

Examples: Why did you say that? (QQ). How old are you? (QQ). How have you been feeling? (QQ).

### 6.3.11. Acknowledgement (K)

Acknowledgements concern the other's experience, make no presumptions about the experience, and uses the others frame of reference. To take the other's view of the other's experience without presuming knowledge of it suggests an "empty" speech act. Therefore,

acknowledgements are contentless in themselves, but they serve to convey receipt of, or receptiveness to communication from the other. Effectively, the content of an Acknowledgement anticipates communication from the other.

Examples: Mm-hmm (KK). Yeah (KK). Well,...(KK). Hello (KK).

### 6.3.12. Interpretation (I)

Interpretations concern the other's experience and presume knowledge of it, but use the speaker's frame of reference. Interpretations serve to explain or label the other's thoughts and behaviours. They include psychological interpretations as well as judgements and evaluations of the other, because each of these presumes to view the other's experience from the speaker's viewpoint.

Examples: You can do anything you set your mind to (II). You're right (II). You're a good patient (II). You could be in a much worse situation (II)

### 6.3.13. Reflection (R)

Reflections concern the others experience, presumes knowledge of it, and uses the other's internal frame of reference as it is understood by the speaker. Therefore, Reflections put the other's experience or purposeful behaviours into words. They include repetitions, restatements, clarifications, and exploratory statements about what the other may be experiencing and frequently convey empathy. Reflections may go beyond what the other has literally said, providing that its intent is to portray the other's experience as seen by the other.

Examples: You were very frightened (RR). So you're on two different kinds of drugs (RR). You must think I'm your worst patient (RR).

### 6.3.14. Grammatical Form and Literal Meaning

Each of the eight mode intents is associated with a set of grammatical features. The grammatical features of each of the modes define the form, which can be considered as an aspect of a speech acts literal meaning, in other words, the conventional meaning of these grammatical features. The form definitions are based on standard grammatical features that based on person and mood (Stiles, 1992).

**Disclosure** (D) form is declarative i.e., contains a statement, or in the form of a statement and is in the first person ("I" or "We") for example, "I wanted to see you." (DD)

**Edification** (E) is also declarative but in the third person ("he," "she," or "it" or a noun).

**Advisement** (A) form involves commands and is in the second person ("you") with verbs involving permission, prohibition or obligation (e.g., "may," "must," "have to," "ought to") for example, "Take off your shirt." (AA)

**Confirmation** (C) First person plural ("we") where referent includes the other (i.e., "we" refers to both speaker and other) for example, "we agree." (CC)

**Question** (Q) form is interrogative i.e., questioning or seeming to question somebody or something; inverted subject-verb order or interrogative words for example, "who," "what," "how," "where," "why" or "when". Examples include "Where were you born?" (QQ) and "Is that what you meant?" (QQ).

**Acknowledgement** (K) forms include non-lexical utterances such as "ah-ha" (KK) or contentless utterances such as terms of address or salutation. Examples include "well,..." (KK), "Hi" (KK) and "Dr Brown." (KK)

**Interpretation** (I) concerns evaluation, is in the second person and implies an attribute or ability of the other person for example, "You are trying too hard" (II). Terms of evaluation

such as "Right" or "Good" if they are used alone in response to the other, for example "Right" (II) if it understood as "you're right"

**Reflection** (R) are in the second person and implies internal experience or purposeful action. Literal repetitions (exact repetition of all or part of the other's utterance) and finishing the other's sentence are also coded as Reflection form. Examples of reflections include "You think I should stop drinking" (RR) and (when I get nervous, I never seem to be able to...) "Finish my sentence." (RR).

Some more examples of both form and intents can be found below (Table 6.2).

**Table 6.2. Verbal Response Mode categories**

| | | |
|---|---|---|
| | **Speaker's frame of reference** | |
| Disclosure (D) | Form | Declarative; first person ("I" or "We") |
| | Intent | Expresses beliefs, ideas, thoughts, perceptions or intentions. |
| | Example | "I have a pain in my toe." (DD) |
| Advisement (A) | Form | Command; second person with verbs involving obligation. |
| | Intent | Attempts to guide behaviour with suggestions, commands, permission, prohibition. |
| | Example | "Put your arms above your head." (AA) |
| Question (Q) | Form | Interrogative; inverted subject-verb order or interrogative words. |
| | Intent | Requests information or guidance |
| | Example | "Any problems with your heart?" (QQ) |
| Interpretation (I) | Form | Evaluation; second person; attributes or abilities of the other person. |
| | Intent | Explains or labels the other person; judges the other person's experiences or behaviours. |
| | Example | "Fine, good." (II) |
| | **Other's frame of reference** | |
| Edification (E) | Form | Declarative; third person ("he," "she," or "it"). |
| | Intent | States objective information. |
| | Example | "The other doctor gave me an injection." (EE) |
| Confirmation (C) | Form | First person plural ("we") |
| | Intent | Compares speakers experience with the other's; agreement, disagreement, shared experience or belief. |
| | Example | "I don't agree with that." (CC) |
| Acknowledgement (K) | Form | Nonlexical or contentless utterances; terms of address or salutation. |
| | Intent | Conveys receipt of, or receptiveness to, other person's communication; simple acceptance or greeting. |
| | Example | "Both sides hurt?" (QQ) "Both sides." (ED) "Vesh." (KK) |
| Reflection (R) | Form | Second person; implies internal experience or purposeful action. |
| | Intent | Puts the other person's experience into own words; repetitions, restatements, clarifications. |
| | Example | "I noticed it first in my wrists." (DD) "Your wrists." (RR) |

(reproduced from O'Brien & Petrie 1996)

### 6.3.15. Mixed modes

VRM form and intent are coded separately, with 'form' based on grammatical features (reflecting literal meaning) and 'intent based' on pragmatic meaning. This results in all combinations of the eight forms and eight intents are possible (8 pure modes and 56 mixed modes)

Examples:

I wonder if you would shut the door. DA

I am a hundred years old. DE

Shall we go now? QA

I'm asking you what she said. DQ

It really bothers me. ED

You have diabetes. IE

## 6.4. Coder training

The VRM manual (Stiles 1992) is supplied with a computerised training programme. Three coders trained extensively with the programme in conjunction with studying the manual for between 30-40 hours. The training programme is self-paced, allowing extended practice applying coding principles to sample transcripts. All components of the training programme can be repeated as many times as necessary until a satisfactory level of competence had been attained. A level of acceptable agreement with the computer assisted training programme was set at a minimum of 85%. This was the same level of agreement deemed acceptable by O'Brien and Petrie (1996), as no particular recommendation is made by Stiles (1992). Further training was undertaken with transcripts of consultations that were excluded from the study because although consent from the patient had been obtained,

questionnaire data had not been collected. Four transcripts were coded and a two out of three agreement of 92.5% was obtained for form and intent (mean score).

### 6.5. Unitising

In accordance with Stiles' (1992) recommendations for unitising and coding, the transcripts were unitised prior to coding by one coder, who unitised all 181 transcripts. According to Stiles (1992), in psychological terms, a single communicative act is equivalent to one unit of experience. The aim of VRM unitising is to accurately represent one psychological unit of experience communicated between both parties. The scoring unit of the VRM is the utterance. The model of an utterance is a simple sentence, which represents a complete thought with one subject and one predicate. Often conversation is not in simple sentences so a more comprehensive definition was developed. The VRM definition of an utterance has been developed in such as way that each unit of speech will only require one VRM code, thereby avoiding cases where an utterance could require more than one code. An utterance is defined as a simple sentence, an independent clause, a non-restrictive dependent clause, an element of a compound predicate, or a term of acknowledgement, evaluation, or address (Stiles, 1992). In short, unitising involves the breaking down of more complicated speech acts into separate utterances that are then ready to be coded.

The examples provided in this section are from the study transcripts to provide an idea of the processes involved.

Simple sentences represent one complete unit of experience and therefore do not require any subdivision and are ready to be coded in their existing form.

Examples:

I am seventy-one.

I went to casualty.

Grammatically, independent clauses are usually separated by a comma and a conjunction ("and," "or," "but") or by a semicolon. The following independent clauses should be treated separately. For example, the following statements becomes two utterances.

Pt: I was working that particular morning, and I wasn't feeling well.

1) I was working that particular morning,
2) and I wasn't feeling well.

Pt: I didn't have surgery there, but I saw the consultant.

1) I didn't have surgery there,
2) but I saw the consultant.

Pt: I had a cold and generally feeling quite low.

1) I had a cold
2) and generally feeling quite low.

Main clauses can stand alone to form simple sentences but a dependent clause must be attached to a main clause. Dependent clauses have all the elements of a sentence, but cannot stand alone as a sentence. There are only two kinds of dependent clauses, restrictive (essential clauses) and non-restrictive (non-essential). Non-restrictive dependent clauses are treated as separate utterances, whereas restrictive clauses are not. The difference between the clauses is that, restrictive (essential) clauses are essential to the meaning of the sentence whereas non-restrictive clauses are not. In other words, if you can remove a clause without changing the meaning of a sentence, the clause is not essential. Non-restrictive (non-essential) clauses add extra or non-essential information to a sentence. Commas are placed

around non-restrictive (non-essential) but are not used around restrictive (essential) clauses. Where dependent clauses are introduced with 'that' or 'which', that should be used if the clause is restrictive (essential) and which if the clause is non-restrictive (non-essential). Conventionally, non-restrictive clauses should be separated by a comma, but usage is inconsistent, so that the notion that each utterance should concerns a separate unit of experience can be a better guide than grammatical rules.

The following are examples of non-restrictive clauses that become two or more separate utterances.

Pt: she then sent me for a cholesterol test, which was perfectly alright.

1) she then sent me for a cholesterol test,
2) which was perfectly alright.

Pt: It was a feeling of tension here and not being able to get my breath, which lasted for quite a long time.

1) It was a feeling of tension here
2) and not being able to get my breath,
3) which lasted for quite a long time.

Dr: I can't find anything abnormal on examining you, which I guess is good news.

1) I can't find anything abnormal on examining you,
2) which I guess is good news.

The following are examples of restrictive clauses.

Pt: I am better than I was when I came in.

Pt: I really did lose faith in her when I was bad.

In situations where there are multiple predicates, each is coded as a separate utterance (Predicate: everything in a simple sentence other than names).

Pt: I went to the chemist and bought Paracetamol.

1) I went to the chemist
2) and bought Paracetamol

Pt: I phoned and spoke to him

1) I phoned
2) and spoke to him

Terms of acknowledgement, evaluation or address are each coded separately

Dr: Good afternoon, Miss XXXX.

1) Good afternoon,
2) Miss XXXX

Pt: Right, okay.

1) Right,
2) okay

Dr: Mm-hmm, yes, yes.

1) Mm-hmm,
2) yes,
3) yes.

In this study, in the process of unitisation of the transcripts, each utterance was numbered and placed on a new line. Two underscored spaces were provided by each utterance for the coders to write in the codes, the first for grammatical form and the second for intent. This was to make distinguishing utterances absolutely clear for the coders and to make inputting the codes into SPSS more straightforward as all the codes would be in a vertical line.

Example of a portion of a transcript before unitisation from the introductory part of the history-taking segment.

1. Dr: I'm Dr XXX and these are two students of mine, do you mind if they sit in?
2. Pt: Not at all.
3. Dr: Now your doctor tells me you have been having some pains in your chest. Is that right?
4. Pt: Er, that's right. I forget the date when I went to see him but, a few weeks ago now.
5. Dr: A few weeks ago. Can you tell me what the pains in your chest were like?
6. Pt: Er, I mean they were centered around my heart and, er, muscular stress I think across the front of my chest predominantly, and sharp pains down my upper arms and and, I've...
7. Dr: Both upper arms or just the right one?
8. Pt: Both upper arms. I mean, I assume it was really just kind of stress
9. Dr: Were you under stress at the time?
10. Pt: Er, yeah I was under stress at work um, at that particular time I was.

The same portion of transcript after unitisation.

1. Dr: __ __ I'm Dr XXX
2. __ __ and these are two students of mine,
3. __ __ do you mind if they sit in?
4. Pt: __ __ Not at all.
5. Dr: __ __ Now your doctor tells me you have been having some pains in your chest.
6. __ __ Is that right?
7. Pt: __ __ Er, that's right.
8. __ __ I forget the date when I went to see him
9. __ __ but, a few weeks ago now.
10. Dr: __ __ A few weeks ago.
11. __ __ Can you tell me what the pains in your chest were like?
12. Pt: __ __ Er, I mean
13. __ __ they were centered around my heart
14. __ __ and, er, muscular stress I think across the front of my chest predominantly,

15. __ __ and sharp pains down my upper arms and
16. __ __ and, I've...
17. Dr: __ __Both upper arms or just the right one?
18. Pt: __ __ Both upper arms.
19. __ __ I mean,
20. __ __ I assume it was really just kind of stress
21. Dr: __ __ Were you under stress at the time?
22. Pt: __ __ Er, yeah
23. __ __ I was under stress at work um, at that particular time I was.

In the first extract from the transcript both the doctor and the patient take turns is speaking five times. In the second extract, after the transcript has been divided up into separate utterances there are nine doctor utterances and fourteen patient utterances.

### 6.6. Applying the VRM coding system

Each utterance is coded twice. The first code is for the utterances grammatical form and the second is for the utterances intent i.e., what is meant rather than what is said. The coding of intent is based on the three principles of classification. 1) Whose experience in the topic of the utterance? 2) Does the utterance require the speaker to make some presumption about the other's experience? 3) Whose frame of reference is used to understand the experience?

Example of the same portion of transcript that has had the coding applied.

1. Dr: D E I'm Dr XXX
2. E E and these are two students of mine,
3. Q Q do you mind if they sit in?
4. Pt: D D Not at all.
5. Dr: E E Now your doctor tells me you have been having some pains in your chest.
6. Q Q Is that right?

7. Pt: E D Er, that's right.

8. D D I forget the date when I went to see him

9. E E but, a few weeks ago now.

10. Dr: R R A few weeks ago.

11. Q A Can you tell me what the pains in your chest were like?

12. Pt: D D Er, I mean

13. E D they were centered around my heart

14. E D and, er, muscular stress I think across the front of my chest predominantly,

15. E D and sharp pains down my upper arms and

16. D U and, I've...

17. Dr: Q Q Both upper arms or just the right one?

18. Pt: E D Both upper arms.

19. D D I mean,

20. D D I assume it was really just kind of stress

21. Dr: Q Q Were you under stress at the time?

22. Pt: K D Er, yeah

23. D D I was under stress at work um, at that particular time I was.

The following gives examples of coding for each of the VRM categories (Table 6.3).

**Table 6.3. Application of coding using examples from the study transcripts**

| | Examples | Rationale |
|---|---|---|
| Disclosure (D) | Dr: But I think you are basically OK. DD<br>Dr: I am sure your heart is fine. DD<br>Dr: I don't think you need tablets. DD<br>Pt: I'm not particularly fond of my GP. DD<br>Pt: I find them a complete waste of time. DD<br>Pt: I was giving up hope. DD<br>Pt: I just cannot breathe and then I panic. DD, DD | Form: Declarative; first person ("I" or "We")<br><br>Intent: Expresses beliefs, ideas, thoughts, perceptions or intentions. |
| Advisement (A) | Dr: Have a seat. AA<br>Dr: Come on in. AA<br>Dr: Take off your shirt and vest. AA<br>Pt: you have to bear with me AA<br>Pt: Do whatever you want. AA | Form: Command; second person with verbs involving obligation.<br>Intent: Attempts to guide behaviour with suggestions, commands, permission, prohibition. |
| Question (Q) | Dr: How long have you been getting them for? QQ<br>Dr: What kind of things bring it on? QQ<br>Pt: Is that to do with the medication? QQ<br>Pt: Are you going to send a letter to them? QQ<br>Pt: Do you think this could be connected to the chemicals in the solution I used to clean the kettle? QQ<br>Pt: Would it have the tendency to restrict me further? QQ | Form: Interrogative; inverted subject-verb order or interrogative words.<br><br>Intent Requests information or guidance |

| | Examples | Rationale |
|---|---|---|
| Interpretation (I) | Dr: You would not have been wrong if you had. II<br>Dr: You got away with it. II<br>Dr: Um, you seem to be coping quite well with that. II<br>Dr: Brave woman. II<br>Pt: You really did relieve me. II<br>Pt: you're welcome. II | Form: Evaluation; second person; attributes or abilities of the other person.<br><br>Intent: Explains or labels the other person; judges the other person's experiences or behaviours. |
| Edification (E) | Dr: It can drop your blood pressure if you take too much of it. EE<br>Dr: And this young man here is a medical student. EE<br>Dr: Its good to get short of breath five times a day. EE<br>Pt: But he had been working incredibly hard. EE<br>Pt: She had a problem with her heart about a year and a half ago. EE<br>Pt: Um, so it was taken four or five times. EE. Each time it was perfectly normal. EE<br>Pt: But my wife insisted that I go to see the doctor. EE | Form: Declarative; third person ("he," "she," or "it").<br><br>Intent: States objective information. |
| Confirmation (C) | Dr: We'll take it from there. CC<br>Pt: I agree with you. DC<br><br>Some of the most common sorts of confirmation intents are expressed in other forms | Form: First person plural ("we")<br>Intent: Compares speakers experience with the other's; agreement, disagreement, shared experience or belief. |
| Acknowledgement (K) | Yep KK<br>Yeah. KK<br>Yes<br>Mm-hm. KK<br>Well. KK<br>Hello. KK<br>Good morning. KK<br>Mrs XXX. KK | Form: Nonlexical or contentless utterances; terms of address or salutation.<br><br>Intent: Conveys receipt of, or receptiveness to, other person's communication; simple acceptance or greeting. |
| Reflection (R) | Dr: But, in a way, even more importantly, is they stabilise plaques. EE<br>Pt: Plaques, RR<br><br>Pt: and I passed out. DE<br>Dr: Effectively lost consciousness. RR<br><br>Pt: And she said ninety over one hundred and fifty a hundred and forty. EE<br>Dr: A hundred and fifty over ninety. RR<br><br>Dr: And instead take two of these. AA<br>Pt: Take two of these. RR<br><br>Dr: The palpitations you described don't sound like anything serious. EE<br>Pt: So its nothing to worry about. RR<br><br>Dr: In fact I would advise you to use it before you go and do something. AA Try and prevent the attack. AA<br>Pt: But really you say it's more sensible to prevent an attack. RR | Form: Second person; implies internal experience or purposeful action.<br><br>Intent: Puts the other person's experience into own words; repetitions, restatements, clarifications. |

### 6.7. Coding

All the 181 transcripts were coded by the remaining two coders. During the coding period, regular meetings were held to discuss and resolve any problems encountered in the coding process. Both VRM coders were blind to the identity of the consultants and to which experimental group the patient belonged.

### 6.8. Inter-coder reliability

Twenty randomly selected transcripts were double coded, and a reliability check was performed. Agreement for Form was 90.5%, and agreement for Intent was 80.6%, resulting in an overall inter-coder reliability of 85.6%, with a disagreement rate of 3.7% where the coders have disagreed on both form and intent (Table 6.4). These figures are marginally higher than those reported by O'Brien & Petrie (1996) whose overall reliability was 82%. Most of the disagreements were between two of the eight modes, Interpretation and Reflection. These two modes as a source of disagreement have been reported by Stiles (1992). To a lesser extent, another source of disagreement was KD, or KE with KC, for patients responding with the one word answer "yes," in response to a question from the doctor. Single word answers, particularly "yes," can be ambiguous, in terms of the coder's interpretation of what the speaker actually meant.

**Table 6.4. Inter-coder reliability**

Agreements shown in percentages

| Transcript No | Number of utterances | Total agreement form + Intent * | Form agreement | Intent agreement | Total disagreement |
|---|---|---|---|---|---|
| 006 | 296 | 68.6 | 87.2 | 75.7 | 5.4 |
| 038 | 206 | 72.2 | 89.7 | 79.5 | 2.9 |
| 084 | 382 | 68 | 89 | 71 | 6.8 |
| 097 | 240 | 70 | 88.7 | 78 | 3.3 |
| 103 | 270 | 79.3 | 90 | 85 | 4.4 |
| 109 | 228 | 83.3 | 93.4 | 86.8 | 3.1 |
| 110 | 255 | 76 | 89 | 77 | 2 |
| 129 | 146 | 77.4 | 92.5 | 82.2 | 2.7 |
| 145 | 246 | 77.2 | 91.9 | 83.3 | 2 |
| 169 | 308 | 77 | 91.9 | 81.8 | 3.3 |
| 166 | 287 | 81.9 | 94.1 | 85.4 | 2.4 |
| 170 | 198 | 73.7 | 93.9 | 77.7 | 2 |
| 172 | 166 | 74.7 | 94.6 | 78.3 | 1.8 |
| 179 | 100 | 79 | 88 | 86 | 5 |
| 187 | 174 | 74.7 | 86.2 | 83.9 | 4.6 |
| 207 | 146 | 70.5 | 87 | 76.7 | 6.8 |
| 210 | 193 | 78.7 | 88.6 | 87 | 3.1 |
| 216 | 139 | 74.1 | 88.5 | 81.3 | 4.3 |
| 223 | 168 | 71.4 | 91.7 | 74.4 | 5.4 |
| 239 | 137 | 78.1 | 94.2 | 81.8 | 2.2 |
| **Mean score** | **214** | **75.3** | **90.5** | **80.6** | **3.7** |

* Matching code pairs

## 6.8. Statistical methods

Frequencies for each mode were calculated for both patients and doctors. VRM codes were aggregated across intents for the analyses as the intents indicate what was actually meant by the speaker rather than the form, which relates to the grammatical construction of an utterance. This was achieved by simply adding the intents together. For example, Dislosure intents = DD + ED + AD + CD + QD + KD + ID + RD + UD.

Particular attention was paid to the frequency of patient Disclosures, Questions, and Reflections. Although patients would make Disclosures in response to questioning by the doctor, and may well voluntarily Disclose a certain amount of private/personal information, it was hypothesised that experimental group patients would Disclose more by expressing concerns and worries. It was also expected that the experimental group patients would ask

more Questions than patients in the control groups. Additionally, it was anticipated that the experimental group would Reflect more, indicating greater frequency of patients clarifying and summarising information. While the VRM system makes no distinctions about the type of Disclosures, Questions and Reflections that the patients make, it would provide an indication of greater participation in these key areas. The length of history taking and concluding segments of the consultations were also considered along with the number of utterances. Between group and between consultant analyses were then performed using the appropriate parametric or non-parametric tests.

# CHAPTER 7

# SAMPLE CHARACTERISTICS AND RESULTS

## 7.1. Foreword

This chapter presents the results of the video intervention and consists of six sections. The first section of the chapter is comprised of the sample demographics and description of all the questionnaire and process measures. It also describes patients' prior experience with the medical profession and provides details of patients who withdrew from the study. The second section of the chapter contains the between-group and between-doctor analyses of the pre-consultation measures. The third section of the chapter presents the between-group analyses of the process of communication and the measures of outcome. The fourth section of the chapter examines the role of individual patient differences on the process of communication, the outcomes and the intervention. The fifth section of the chapter investigates the influence of the differences between doctors on the process of communication, the outcomes and the intervention. The final section of the chapter encompasses the patients' evaluation of the intervention video and summary of the findings.

Some of the analyses involves using the same data more than once. If more than one inferential statistical test is carried out on the data from one experiment then the chance of a type 1 error will increase. The probability of making a type 1 error can be decreased by altering the level of significance for example by setting the $p$ value at 0.01 instead of 0.05. Then there is only one chance in a 100 that results termed 'significant' could occur by chance alone. However, by doing that it becomes more difficult to find significant results, the *power* of the test is decreased and the risk of making a type II error increases (Munro, 1997). The simplest adjustment is known as the 'Bonferroni' where for

example if you do three tests, you should reduce the $p$ value to 0.05/3, which is 0.02. However, you are entitled to stay with the 5% level for one or two tests if they are pre-planned (Hopkins, 2000). As non-significant findings are common in this type of research it was decided not to decrease the chance of finding a significant result at the $p<0.05$ level, particularly as some parts of the analysis were exploratory.

## SECTION 1. Sample descriptives

### 7.1.1. Introduction

This first section of the chapter provides a description of the sample (n = 206), relating to the patient demographics, pre-consultation questionnaire measures, measures of the process of communication and the post-consultation measures of outcome. Continuous measures were also considered in terms of the distribution of scores. This section also describes patients' prior experience with the medical profession and provides details of patients who withdrew from the study by failing to return their post-consultation questionnaire measures.

### 7.1.2. Sample distribution

The Kolmogorov-Smirnov (K-S) one-sample test was used to test the hypothesis that a sample comes from a normal distribution. The K-S Z is based on the largest absolute difference between the observed and the theoretical cumulative distributions. However, the K-S test is very conservative and when the sample size is large there is an increased likelihood of finding non-normality. Where data were not normally distributed, measures of skewness and kurtosis were considered before determining whether to use parametric or non-parametric statistical tests. For both skewness and kurtosis, the normal distribution yields a value of zero. In the case of skewness positive values show that the data is skewed to the right, and negative values show that the data is skewed to

the left. Skewness is calculated by dividing the measure of skewness by the standard error. Values exceeding ± 1.96 are significant at the .05 level, as 95% of scores in a normal distribution fall between ± 1.96 standard deviations from the mean. Kurtosis measures whether the distribution is too peaked or too flat. Values should also fall between ± 1.96 and is calculated by dividing the measure of kurtosis by the standard error. Negative scores indicate too many cases in the tails of the distribution, meaning the distribution is too flat and positive kurtosis indicates too few cases in the tails of the distribution meaning the distribution is too peaked. Both these measures of skewness and kurtosis are very sensitive to extreme values (Munro, 1997).

### 7.1.3. Demographics

The mean age of the sample was 57.5 years with a range of 23-90 years. The mean number of years in full-time education since the age of five was 13 with a range of 0-25 years (Table 7.1.). Patients' age was found to be normally distributed. Education was positively skewed, but the value for kurtosis was acceptable and the mean and median values were close.

**Table 7.1. Description of patients' age and years of education**

| Variable | Valid n | Range | Sample mean (SD) | Median | K-S Z | p | Skewness /SE | Kurtosis /SE |
|---|---|---|---|---|---|---|---|---|
| Age | 206 | 23-90 | 57.5 (15.1) | 58.5 | 0.88 | .509* | -1.33§ | -1.84§ |
| Education (years) | 202 | 0-25 | 12.9 (4.2) | 12 | 2.52 | .000 | 2.82 | -0.05§ |

* Measures with normal distributions

§ Measures within normal parameters for skewness and kurtosis

Overall, more males than females participated in the study, 56% and 44% respectively. Nearly half of the sample was married (46%), a further 21% were single, and the remaining 33% were either cohabiting, separated, divorced or widowed. Eighty five percent of the sample were white and from the UK or Europe and the remainder were

from other ethnic backgrounds. English was spoken as a first language by 83% of the sample; the remainder were bilingual (Table 7.2.).

**Table 7.2. Frequencies of patients' gender, marital status, ethnicity and language**

| Variable | Frequency | Percent | Variable | Frequency | Percent |
|---|---|---|---|---|---|
| **Gender** n = 206 | | | **Ethnicity** n = 205 | | |
| Male | 115 | 56 | Black (African) | 5 | 2 |
| Female | 91 | 44 | Black (Afro-C) | 4 | 2 |
| **Marital status** n = 206 | | | Asian (Indian) | 10 | 10 |
| Single | 44 | 21 | Asian (African) | 0 | 0 |
| Married | 96 | 46 | Oriental | 1 | 0.5 |
| Cohabiting | 16 | 8 | White (UK) | 146 | 71 |
| Separated | 5 | 2 | White (Europe) | 28 | 14 |
| Divorced | 21 | 10 | White (Other) | 4 | 4 |
| Widowed | 26 | 12 | Other | 7 | 7 |
| **1st Language** n = 206 | | | | | |
| English | 171 | 83 | | | |
| Other | 35 | 17 | | | |

### 7.1.4. Pre-consultation questionnaire descriptives

This section contains descriptives for the pre-consultation questionnaire measures covering the psychological measures of anxiety, health cognitions, assertiveness, and perceived health status. Sub-scales of measures have also been described.

### 7.1.5. Distributions of the psychological measures

The K-S tests for normality of the pre-consultation measures indicate that two of the three Health Locus of Control Scales, Chance and Powerful Others were normally distributed and the Internal scale was sufficiently close to being normally distributed to satisfy the assumptions for parametric analysis. The Rathus Assertiveness Schedule was also normally distributed (Table 7.3.). The State Anxiety scale showed low levels of anxiety overall, was positively skewed, but within normal levels for kurtosis. The negative value for kurtosis on the Health Opinion Survey indicated that the distribution

of scores was rather flat. This was more apparent on the information subscale, but was reflected in the behavioural subscale and overall score. In all cases the measures of central tendency i.e. the means and medians were close, suggesting an even distribution of scores. Although there were some small departures from normality transformations were not performed. This decision was taken because it has been recommended that transformations should be approached cautiously, as they can make interpreting the results more complex. Transformed data are not in the same metric as the original, resulting in measures of central tendency and dispersion being unclear in relation to the original measure (Munro, 1997).

While these measures did not meet all these stringent criteria for normality, these figures represent relatively small departures from normality and it has been established that parametric tests are sufficiently robust to withstand moderate violations of the assumptions and therefore these measures will be treated as if normally distributed.

**Table 7.3. Descriptives for psychological variables**

| Variable | Valid n | Range | Sample Mean (SD) | Median | K-S Z | p | Skewness /SE | Kurtosis /SE |
|---|---|---|---|---|---|---|---|---|
| Anx-1 | 202 | 6-22 | 10.7 (4.1) | 10 | 1.78 | .003 | 4.2 | -0.60§ |
| IHLC | 203 | 12-35 | 23.8 (4.5) | 24 | 1.4 | .040* | -2.85 | 0.16§ |
| CHLC | 204 | 6-35 | 19.8 (4.8) | 20 | 1.02 | .248* | 0.82§ | 0.14§ |
| PHLC | 203 | 6-36 | 20 (6.3) | 20 | 1.15 | .144* | 0.36§ | -2.44 |
| HOS-I | 201 | 0-7 | 3.2 (2.2) | 3 | 1.82 | .003 | 1.05§ | -3.27 |
| HOS-B | 201 | 0-9 | 3.9 (2.7) | 3 | 2.11 | .000 | 2.33 | -2.8 |
| HOS-T | 201 | 0-16 | 7.1 (4.2) | 6 | 1.57 | .015 | 2.37 | -2.52 |
| RAS | 195 | 14-60 | 37.1 (9.2) | 38 | 0.84 | .480* | -0.95§ | -0.91§ |

* Measures with normal distributions

§ Measures within normal parameters for skewness and kurtosis

[**Abbreviations**: Anx-1 (pre-consultation state anxiety), IHLC (internal health locus of control), CHLC (chance health locus of control), PHLC (powerful others health locus of control), HOS-I (health opinion survey – information subscale), HOS-B (health opinion survey – behavioural subscale), HOS-T (health opinion survey – overall score), RAS (Rathus assertiveness schedule)].

When the original State-Trait Anxiety Inventory was shortened by Marteau & Bekker (1992), the authors found that in a sample of pregnant women the pro-rated means, which renders the scale equivalent to the 20-item version were 37.1, in a sample of student nurses 39.9 and in medical students was 46.8. These figures are all higher than found in this study where the pro-rated mean was 35.7.

The Multidimensional Health Locus of Control Scale (MHLC) (Wallston et al., 1978) was assessed with four different samples from the USA (Table 7.4.). In this study the mean for the IHLC was 23.77, for the CHLC it was 19.84 and for PHLC it was 19.99. In this sample the mean on the Internal scale was lower than that of the four samples described, the mean score on the Chance scale was higher, and the mean score on the Powerful Others scale was closest to that of healthy adults.

**Table 7.4. Mean scores on the MHLC subscales for four different samples**

| Sample | n | IHLC | CHLC | PHLC |
|---|---|---|---|---|
| Chronic patients | 609 | 25.78 | 17.64 | 22.54 |
| College students | 749 | 26.68 | 16.72 | 17.87 |
| Healthy adults | 1287 | 25.55 | 16.21 | 19.16 |
| Persons engaged in preventive health behaviours | 720 | 27.83 | 15.52 | 18.44 |

The Health Opinion Survey (HOS) (Krantz, Baum & Wideman, 1980) was originally assessed with two samples from the USA (Table 7.5.). In this study the mean for behavioural involvement was 3.87, for information the mean was 3.23 and the total score was 7.10. The mean for behavioural involvement was slightly higher than in the American samples and lower for the information subscale resulting in a slightly lower overall score.

**Table 7.5. Means (SD's) for the HOS subscales and total score**

| Sample | n | Behavioural involvement | Information | Total HOS |
|---|---|---|---|---|
| College dormitory residents | 56 | 3.79 (2.28) | 4.05 (2.20) | 7.84 (3.25) |
| Users of college infirmary | 81 | 3.00 (2.25) | 4.31 (2.13) | 7.31 (3.45) |

The shortened version of the Rathus Assertiveness Schedule has been little used and only one study reports a mean for this measure (Anderson et al., 1987). However, in this study the RAS was not scored in the same way, so it was not possible to make a comparison.

### 7.1.6. Distribution of measures of health status (SF-36)

Of the eight SF-36 subscales and the two component summaries, K-S Z tests showed that only two of the subscales were normally distributed, Energy/Vitality and General Health Perceptions (Table 7.6.). Most of the subscales were negatively skewed, but some were within normal parameters for kurtosis except Role Limitations - Physical and Social Functioning. Measures of central tendency were similar with the exception of Role Limitation Physical and Emotional and Social Functioning. Role Limitations - Physical and Emotional were both extremely skewed with close to two thirds of scores representing the maximum possible, i.e. no limitations due to physical or emotional problems. Close to a third of scores was zero indicating the maximum limitations due the physical or emotional problems with very few scores in between. This was probably due the scoring of these sub-scales, as originally responses were in a dichotomous yes/no format. The median score on these two subscales was 100, which is the maximum score. The Social Functioning sub-scale was similarly distributed to the Role Limitation sub-scales.

Most of the subscales and the component summaries do not represent serious departures from normality and have been treated as such in the analysis. It has previously been

observed that some of the SF-36 subscales are not normally distributed and neither do they transform successfully, but researchers have considered that ANOVA is sufficiently robust to withstand such departures from normality (Murrell et al., 1999).

**Table 7.6. Descriptives of patients' perceived health status**

| SF-36 | Valid n | Range | Sample Mean (SD) | Median | K-S Z | p | Skewness /SE | Kurtosis /SE |
|---|---|---|---|---|---|---|---|---|
| PF | 205 | 0-100 | 74.8 (24) | 80 | 2.33 | .000 | -6.65 | 1.88§ |
| RP | 205 | 0-100 | 66.6 (44.1) | 100 | 5.24 | .000 | -4.16 | -4.07 |
| RE | 204 | 0-100 | 78.6 (37.1) | 100 | 6.54 | .000 | -8.21 | 0.27§ |
| SF | 203 | 22-100 | 85.1 (22.4) | 100 | 4.96 | .000 | -8.13 | 2.34 |
| MH | 203 | 24-100 | 72.3 (17.8) | 76 | 2.08 | .002 | -4.11 | -0.00§ |
| EV | 203 | 0-100 | 52.8 (22.2) | 55 | 1.15 | .145* | -2.12 | -1.12§ |
| P | 204 | 11-100 | 72 (27.1) | 77.8 | 2.78 | .000 | -3.63 | -1.89§ |
| GHP | 201 | 10-100 | 57.7 (21.4) | 60 | 1.13 | .153* | -0.86§ | -2.37 |
| PCS | 200 | 9-62 | 42.1 (11.6) | 44.3 | 1.45 | .030 | -4.37 | -0.27§ |
| MCS | 200 | 21-64 | 49.9 (10.2) | 53.4 | 2.13 | .000 | -5.16 | -0.25§ |

* Measures with normal distributions

§ Measures within normal parameters for skewness and kurtosis

[**Abbreviations**: PF (physical functioning), RP (role limitation – physical), RE (role limitation – emotional), SF (social functioning), MH (mental health), EV (energy/vitality), P (bodily pain), GHP (general health perceptions), PCS (physical component summary), MCS (mental component summary)].

A comparison of scores on the SF-36 from this study sample compared to the UK normative data (Oxford Health Life Survey) is shown in Table 7.7. This comparison shows that on all eight sub-scales of the SF-36 the study sample had lower mean scores than the UK population norms, suggesting that in all eight dimensions the study sample rated their health as being poorer. These differences were particularly notable for Physical Function, Role Physical, Energy/Vitality, Bodily Pain and General Health Perceptions where the mean difference is approximately 10 or more.

**Table 7.7. SF–36 UK population means (SD's) compared to study sample**

| | UK norms | | Study sample | |
|---|---|---|---|---|
| **SF-36 Scale** | **Mean** | **SD** | **Mean** | **SD** |
| Physical functioning | 88.40 | 17.98 | 74.76 | 23.97 |
| Role-physical | 85.82 | 29.93 | 66.59 | 44.06 |
| Role-emotional | 82.93 | 31.76 | 78.59 | 37.07 |
| Social functioning | 88.01 | 19.58 | 85.11 | 22.38 |
| Mental health | 73.77 | 17.24 | 72.26 | 17.79 |
| Energy/vitality | 61.13 | 19.67 | 52.83 | 22.24 |
| Bodily pain | 81.49 | 21.69 | 71.95 | 27.09 |
| General health | 73.52 | 19.90 | 57.74 | 21.44 |

(Jenkinson, Layte, Wright & Coulter et al., 1996)

### 7.1.7. Descriptives of the measures of outcome of the consultations

The results of the K-S tests for normality of the post-consultation measures indicate that Recovery Locus of Control, two of the subscales of the MISS (Distress Relief and Rapport) and the overall score were normally distributed (Table 7.8.). All the post-consultation measures except state anxiety were within normal parameters for skewness and only two measures were outside the parameters for kurtosis, Communication Comfort and patients' perceived ability to communicate. In all cases the measures of central tendency were close. Although there were some minor departures from normality, these measures were considered sufficiently normal to be subjected to parametric tests.

**Table 7.8. Post-consultation questionnaire descriptives**

| Variable | Valid n | Range | Sample Mean (SD) | Median | K-S Z | p | Skewness /SE | Kurtosis /SE |
|---|---|---|---|---|---|---|---|---|
| RLOC | 198 | 18-45 | 33.6 (4.8) | 33 | 1.05 | .223* | 0.6§ | 0.13§ |
| ANX-2 | 196 | 6-22 | 10.4 (3.7) | 10 | 1.66 | .008 | 4.56 | 1.12§ |
| MISS - DR | 206 | 29-77 | 56.6 (9.6) | 56 | 0.93 | .350* | 0.69§ | -0.91§ |
| MISS - CC | 206 | 13-28 | 21.8 (3.9) | 21 | 1.77 | .004 | 0.4§ | -2.45 |
| MISS - R | 206 | 25-70 | 53.8 (8.4) | 53 | 1.28 | .077* | 0.62§ | 0.26§ |
| MISS - CI | 206 | 12-28 | 21.3 (3.7) | 20 | 2.21 | .000 | 1.24§ | -1.66§ |
| MISS - tot | 206 | 83-203 | 153.4 (22.8) | 150 | 1.25 | .089* | 1.02§ | -1.06§ |
| PAC | 202 | 4-20 | 16.8 (2.6) | 16 | 3.05 | .000 | -1.14§ | 10.64 |

* Measures with normal distributions

§ Measures within normal parameters for skewness and kurtosis

[**Abbreviations**: RLOC (recovery locus of control), ANX-2 (post-consultation state anxiety), MISS (medical interview satisfaction scale) and its sub-scales, DR (distress relief), CC (communication comfort), R (rapport), CI (compliance intent), MISS-tot (total score) and PAC (patients' perceived ability to communicate)].

There is no normative data available for the Recovery Locus of Control scale but Partridge and Johnston (1989) who developed the scale reported a mean of 33.0 (6.1) in stroke patients and 30.8 (5.6) in wrist fracture patients. In this study it was 33.64 (4.75), which was very close to the mean reported for stroke patients. No normative data was available for the revised version of Medical Interview Satisfaction Scale.

### 7.1.8. Follow-up questionnaire descriptives

This section reports on the descriptives of the dependent variables of the 4 week follow-up questionnaire and covers patient recall, understanding, adherence, information, recall and two sub-scales from the SF-36 Role Limitations Physical and Mental Health (Table 7.9.). The results of the KS-Z tests indicate that only the Mental Health sub-scale of the SF-36 were normally distributed. All of the measures were negatively skewed. Ceiling and floor effects were a problem for recall of diagnosis and recall of other recommendations. Recall of other recommendations, adherence to other

recommendations, Mental Health and reassurance were within normal parameters for kurtosis. These measures were treated as though normally distributed but again caution was exercised when considering the results.

**Table 7.9. Descriptives of follow-up questionnaire**

| Variable | Valid n | Range | Sample Mean (SD) | Median | K-S Z | p | Skewness /SE | Kurtosis /SE |
|---|---|---|---|---|---|---|---|---|
| Recall-D | 116 | 1-5 | 3.5 (1.7) | 5 | 3.45 | .000 | -.2.42 | -3.37 |
| Recall-O | 115 | 1-3 | 1.5 (0.8) | 1 | 4.84 | .000 | 5.35 | -0.99§ |
| Understanding | 154 | 1-5 | 4.2 (1.1) | 4 | 3.34 | .000 | -6.76 | 2.64 |
| Adherence-M | 64 | 1-5 | 4.5 (1.1) | 5 | 3.63 | .000 | -7.76 | 7.37 |
| Adherence-0 | 63 | 1-5 | 3.6 (1.4) | 4 | 2.13 | .000 | -2.72 | -0.64§ |
| RP | 135 | 0-100 | 69.6 (40) | 100 | 3.91 | .000 | -4.08 | -2.32 |
| MH | 132 | 24-100 | 68.9 (18) | 72 | 1.16 | .137* | -2.4 | -0.96§ |
| Info | 156 | 1-5 | 2.7 (0.7) | 3 | 5.34 | .000 | -5.94 | 5.00 |
| Reassurance | 155 | 1-5 | 3.6 (1.1) | 4 | 2.96 | .000 | -3.4 | -0.01§ |

* Measures with normal distributions

§ Measures within normal parameters for skewness and kurtosis

[**Abbreviations**: Recall-D (recall of diagnosis), Recall-O (recall of other recommendations), Adherence-M (adherence to medications), Adherence-O (adherence to other recommendations), RP (role limitations – physical), MH (mental health), Info (information received)].

Patients were also asked whether the outcome of their appointment was what they expected. Out of the 151 patients who answered this question 105 (69.5%) responded 'Yes' the outcome was what they expected and 46 (30.5%) responded 'No' the outcome was not as they had expected.

### 7.1.9. Patients prior experience with the medical profession

Although patients recruited into this study had been identified as new to the cardiology clinic, many of the patients may have attended other outpatient clinics and had other medical experience. To assess this, data was collected to quantify patients' prior experience in a number of settings in order that comparisons across groups could be made. The data collected included; the number of visits to their GP in the previous year,

the number of appointments at other outpatient clinics and the number of times the patient had been in hospital. This measure was not introduced until after the start of data collection when it was realised that it would be a serious omission not to include a measure of patients' prior experience so these findings are based on data collected from 182 patients. All patients had been to see their GP within the last year a mean of 5.2 (3.6) times. Eighty percent of all the patients reported that they had attended other outpatient clinics a mean of 3.8 (5) visits at some time, and 78.5% of all the patients reported that they had stayed in hospital at some time, a mean of 3.2 (3.8) hospitalisations.

### 7.1.10. Descriptives of the process of communication

The following description covers the measures of the process of communication and includes the duration of the consultations, number of patient and doctor verbalisations, and the VRM speech act categories for both patients and doctors.

### 7.1.11. Duration of consultations

The duration of the consultations were considered in terms of both the history-taking and concluding segments separately, and the overall length, which was the sum of the history and the conclusion.

The history-taking segment was the longest part of the consultation with a mean length of 7 minutes, 17 seconds. The mean length of the concluding segment was 4 minutes, 12 seconds. Overall, the mean consultation length was 11 minutes, 37 seconds. There was considerable variability in the duration of the consultations with the shortest being just over three minutes and the longest lasting marginally over 38 minutes. The K-S Z

test showed that the conclusion and overall consultation time were normally distributed, but all were positively skewed and had fairly peaked distributions.

**Table 7.10. Length of consultations for the whole sample**

| Time in seconds | n | Range | Mean (SD) | Median | K-S Z | p | Skewness /SE | Kurtosis /SE |
|---|---|---|---|---|---|---|---|---|
| History | 175 | 154-1454 | 437 (191) | 405 | 1.54 | .017 | 11.51 | 20.03 |
| Conclusion | 175 | 28-1063 | 252 (158) | 228 | 1.30 | .067* | 10.14 | 17.29 |
| Overall | 181 | 182-2287 | 697 (305) | 653 | 1.32 | .063* | 12.03 | 24.15 |

* Measures with normal distributions

§ Measures within normal parameters for skewness and kurtosis

Note – The discrepancy between the number of patients timed in the history/conclusion and the overall number is because six patients had no physical examination and therefore there was no obvious distinction between the segments

### 7.1.12. Number of utterances per consultation

The 181 consultations yielded 58,695 utterances, with a mean of 324 utterances per consultation. A mean of 210 utterances occurred during the history-taking segment, and 113 occurred during the concluding segment. Overall, the proportion of doctor to patient talk was very similar, with doctors contributing 50.2% of the utterances. None of the frequency counts relating to the number of utterances were normally distributed (Table 7.11.).

**Table 7.11. Number of utterances per consultation**

| n = 181 | Range | Total | % | Mean (SD) | Median | K-S Z | p | Skewness /SE | Kurtosis /SE |
|---|---|---|---|---|---|---|---|---|---|
| **History** | | | | | | | | | |
| Patient | 27-505 | 20.425 | 54.9 | 115.4 (61) | 105 | 1.55 | .017 | 13.46 | 30.91 |
| Doctor | 31-241 | 16.779 | 45.1 | 94.8 (38.2) | 88 | 1.63 | .010 | 9.4 | 10.74 |
| Pt + Dr | 82-746 | 37.204 | 100 | 210.2 (89.9) | 200 | 1.72 | .006 | 12.46 | 25.2 |
| **Conclusion** | | | | | | | | | |
| Patient | 3-224 | 8,045 | 40.27 | 45.5 (35.5) | 35 | 1.98 | .001 | 10.14 | 13.25 |
| Doctor | 11-215 | 11.932 | 59.73 | 67.4 (39.9) | 59 | 1.83 | .004 | 8.26 | 6.8 |
| Pt + Dr | 19-368 | 19,977 | 100 | 112.9 (69.4) | 96 | 1.6 | .012 | 8.19 | 6.72 |
| **Overall** | | | | | | | | | |
| Patient | 42-729 | 29,257 | 49.8 | 162 (85) | 148 | 1.47 | .026 | 12.81 | 30.22 |
| Doctor | 59-442 | 29.483 | 50.2 | 162.6 (66) | 149 | 1.76 | .004 | 9.2 | 10.51 |
| Pt + Dr | 101-1114 | 58.695 | 100 | 324.3 (138.3) | 299 | 1.62 | .011 | 10.93 | 19.44 |

* Measures with normal distributions

§ Measures within normal parameters for skewness and kurtosis

Note – n = 177 in the history and concluding segments

Consultation length and the total number of utterances were correlated, and the results show that the length of the consultations was directly related to the number of utterances ($r = 0.9$, $p < 0.01$ 2-tailed). This suggests that longer consultations were due to a greater amount of discussion taking place, rather than, for example, the same amount of discussion conducted more slowly or with longer gaps between utterances.

### 7.1.13. Aggregation of VRM modes

The VRM modes were aggregated across intents for both patients and doctors by adding intents of one particular mode together. Aggregating across intents was chosen because the intents reflect what was actually meant by the speaker, rather than the grammatical form. Tables 7.12. and 7.13. show the descriptives of the aggregated modes for both patients and doctors. The number of patient utterances for each category in descending order were, Edifications, followed by Disclosures, Acknowledgements, Confirmations, Questions, Interpretations, Reflections, and Advisements.

**Table 7.12. Description of the aggregated intents for patients (whole interview)**

| n = 181 | Range | Sum | Mean (SD) | Median | K-S Z | P | Skewness /SE | Kurtosis /SE |
|---|---|---|---|---|---|---|---|---|
| Disclosures | 6-192 | 10328 | 57 (34) | 52 | 1.34 | .054* | 7.69 | 8.47 |
| Edifications | 14-393 | 11228 | 62 (62) | 54 | 2.1 | .000 | 21.61 | 73.86 |
| Advisements | 0-6 | 78 | 0.4 (1) | 0 | 5.68 | .000 | 17.11 | 31.24 |
| Confirmations | 0-75 | 1575 | 9 (9) | 6 | 2.28 | .000 | 18.92 | 51.35 |
| Questions | 0-21 | 892 | 4.9 (4.1) | 4 | 1.72 | .005 | 6.8 | 4.62 |
| Acknowledgements | 2-81 | 3716 | 21 (14) | 17 | 1.81 | .003 | 7.3 | 5.55 |
| Interpretations | 0-12 | 341 | 1.9 (2.2) | 1 | 3.22 | .000 | 8.95 | 8.37 |
| Reflections | 0-12 | 331 | 1.8 (2.2) | 1 | 2.81 | .000 | 9.33 | 9.19 |

* Measures with normal distributions

§ Measures within normal parameters for skewness and kurtosis

The number of doctor utterances for each category in descending order were, Questions are the most frequently spoken category followed by Acknowledgements, Edifications, Disclosures, Advisements, Reflections, Interpretations, and Confirmations.

**Table 7.13. Description of the aggregated intents for doctors (whole interview)**

| n = 181 | Range | Sum | Mean (SD) | Median | K-S Z | p | Skewness /SE | Kurtosis /SE |
|---|---|---|---|---|---|---|---|---|
| Disclosures | 1-73 | 2816 | 15.6 (10.1) | 14 | 1.597 | .012 | 11.41 | 20.72 |
| Edifications | 2-143 | 6049 | 33.7 (21.9) | 28 | 1.613 | .011 | 8.93 | 10.6 |
| Advisements | 3-45 | 2518 | 13.9 (8.4) | 12 | 1.725 | .005 | 7.23 | 4.37 |
| Confirmations | 0-22 | 535 | 3 (3.7) | 2 | 3.020 | .000 | 11.77 | 15.25 |
| Questions | 8-111 | 7111 | 39.3 (17.5) | 36 | 1.509 | .021 | 6.35 | 5.22 |
| Acknowledgements | 6-157 | 6458 | 35.7 (35.7) | 32 | 1.662 | .008 | 11.55 | 22.55 |
| Interpretations | 1-45 | 1814 | 10 (6.4) | 8 | 1.976 | .001 | 7.9 | 9.25 |
| Reflections | 0-51 | 2045 | 11.3 (7.2) | 10 | 1.978 | .001 | 10.55 | 17.99 |

* Measures with normal distributions

§ Measures within normal parameters for skewness and kurtosis

Almost all the process data, which was based on frequency counts was found to be outside the parameters of the normal distribution, with measures of skewness and kurtosis being high, indicating that the distributions were all positively skewed and peaked. Square root transformations were applied to all data to be used in the analysis. These transformations had the desired effect of rendering the data closer to the normal distribution and all but patient Reflections were found to be normal when K-S Z tests

were re-applied. The transformed data were used in the analysis, but means and SD's are reported in the original measurement.

### 7.1.14. Patients who withdrew from the study

This section briefly examines the characteristics of patients who after having consented to participate, completed the pre-consultation assessment, watched the intervention video (if applicable) and had their consultation audiotaped, withdrew from the study voluntarily, by not returning the post-consultation questionnaires. Out of the 247 patients who participated in the study initially, 13.4% of patients (33), failed to return the post-consultation questionnaires. Therefore, the remaining sample was n = 214. The patients who voluntarily withdrew (n = 33) were approximately equally distributed between the groups with slightly more in the control group. Experimental group = 10, placebo control group = 10 and control group = 13. The distribution of these patients between the doctors was as follows. Dr. A = 13, Dr. B = 2, Dr. C = 6 and Dr. D = 12. Doctors A and D had the highest withdrawal rate, but this was proportional to the overall number of patients seen by each doctor.

In this sub-sample of patients who withdrew from the study, there were 23 males and 10 females. English was the first language for two thirds of this group (22) and the remaining third (11) primarily spoke languages other than English. From the remaining sample only a further 34 patients had languages other than English as their primary language, suggesting that language difficulties may have been a contributory factor in their withdrawal. The means for age, education, and their health related cognitions were similar between the patients who withdrew and the rest of the sample (Table 7.14.).

The differences were more marked for perceptions of health status (shaded area of Table) where the non-responders mean scores were lower across all dimensions, suggesting that this group perceived their health as being less good and again may have been a contributory factor in their decision to withdraw.

**Table 7.14. Means (SD's) between patients who withdrew and the remaining sample**

| Variable | Withdrawals n = 33 | Remaining sample n = 214 |
|---|---|---|
| Age | 52.6 (13.4) | 57.5 (15.1) |
| Education | 12.5 (3.5) | 12.9 (4.2) |
| Pre-consultation anxiety | 10.6 (3.3) | 10.7 (4.2) |
| Internal health LOC | 25.2 (3.9) | 23.8 (4.5) |
| Chance health LOC | 20.7 (4.5) | 19.8 (4.8) |
| Powerful others health LOC | 20.8 (5.7) | 20 (6.3) |
| Health opinion survey – information | 3 (2.1) | 3.2 (2.2) |
| Health opinion survey – behaviour | 4.1 (2.4) | 3.9 (2.7) |
| Health opinion survey – total | 7.1 (3.9) | 7.1 (4.2) |
| Rathus assertiveness schedule | 36.4 (7.2) | 37.1 (9.2) |
| SF - 36 Physical functioning | 72.3 (19.2) | 74.8 (24) |
| SF - 36 Role limitation – physical | 53.8 (43.4) | 66.6 (44.1) |
| SF - 36 Role limitation – emotional | 68.7 (42.4) | 78.6 (37.1) |
| SF - 36 Social functioning | 80.7 (23.5) | 85.1 (22.4) |
| SF - 36 Mental health | 67.2 (19.7) | 72.3 (17.8) |
| SF - 36 Energy/vitality | 45.2 (23.1) | 52.8 (22.2) |
| SF - 36 Pain | 60.3 (27.6) | 72 (27.1) |
| SF - 36 General health perceptions | 48.7 (16.8) | 57.7 (21.4) |

## SECTION 2. Between group analysis of the demographic and pre-consultation measures

### 7.2.1. Introduction

In this section the tables will refer to the experimental group as 'experimental' the placebo control group as 'placebo' and the control group as 'control'. The sample size in each of the groups was as follows; the experimental group (n = 66), the placebo control group (n = 67) and the control group (n = 73).

### 7.2.2. Analysis of demographic data between groups

To identify whether there were any differences between the groups on the demographic variables, Analysis of Variance (ANOVA) and Chi-square were used as appropriate. ANOVA is appropriate when comparing more than two groups and Chi-square is suitable for use with categorical variables. The analysis of the demographic data showed that there were no significant differences between the groups on patients age ($F_{(2,203)} = 0.128$, $p = 0.880$) or number of years in full time education ($F_{(2,199)} = 1.150$, $p = 0.319$).

**Table 7.15. Means (SD's) of age and education by group**

| Variable | Valid n | Experimental n = 66 | Placebo n = 67 | Control n = 73 |
|---|---|---|---|---|
| Age | 206 | 56.7 (14.4) | 56.9 (14.2) | 58.3 (16.4) |
| Education (years) | 202 | 13.6 (4.2) | 12.5 (3.9) | 12.8 (4.2) |

No significant differences were found between the groups for sex ($x^2_{(2)} = 5.230$, $p = 0.073$), marital status ($x^2_{(10)} = 4.524$, $p = 0.921$), ethnic group ($x^2_{(14)} = 18.753$, $p = 0.175$), English as a first language ($x^2_{(2)} = 4.652$, $p = 0.098$). The frequencies for these variables are shown in Table 7.16. As no significant differences were found between the groups on these demographic variables allocation to groups was considered to have been successful.

**Table 7.16. Frequencies of patients' gender, marital status, ethnicity and language by group**

| Variable | Experimental n = 66 | Placebo n = 67 | Control n = 73 |
|---|---|---|---|
| **Gender** n = 206 | | | |
| Male | 42 | 30 | 43 |
| Female | 24 | 37 | 30 |
| **Marital status** n = 206 | | | |
| Single | 15 | 12 | 17 |
| Married | 31 | 33 | 31 |
| Cohabiting | 4 | 4 | 8 |
| Separated | 2 | 2 | 1 |
| Divorced | 7 | 9 | 5 |
| Widowed | 7 | 8 | 11 |
| **Ethnicity** n = 205 | | | |
| Black (African) | 2 | 0 | 3 |
| Black (Afro-C) | 1 | 2 | 1 |
| Asian (Indian) | 3 | 3 | 4 |
| Asian (African) | | | |
| Oriental | 0 | 0 | 1 |
| White (UK) | 40 | 51 | 55 |
| White (Europe) | 12 | 10 | 6 |
| White (Other) | 4 | 0 | 0 |
| Other | 3 | 1 | 3 |
| **1st Language** n = 206 | | | |
| English | 51 | 54 | 66 |
| Other | 15 | 13 | 7 |

### 7.2.3. Analysis of patients' prior experience with the medical profession by group

One-way ANOVA was used to explore whether there were any differences between the groups on these patients prior experience with the medical profession and none were found to be significant (Table 7.17.). Number of visits to GP ($F_{(2,162)} = 2.813$, $p = 0.063$); number of outpatient appointments ($F_{(2,166)} = 1.225$, $p = 0.296$); and number of hospitalisations ($F_{(2,175)} = 1.001$, $p = 0.370$).

**Table 7.17. Patients' prior experience with the medical profession by group**

| Means (SD) | Experimental n = 66 | Placebo n = 67 | Control n = 73 |
|---|---|---|---|
| Visits to GP | 4.2 (2.7) | 5.8 (4.2) | 5.3 (3.6) |
| Visits to outpatients | 2.8 (4.2) | 4 (5.4) | 4.3 (5.4) |
| No. of hospitalisations | 2.7 (3.9) | 3.6 (4.4) | 3.1 (2.9) |

### 7.2.4. Analysis of the psychological measures between the groups

One-way ANOVA was used to determine whether there were any differences between the groups on the psychological measures. No significant differences were found between the groups on any of these measures (Table 7.18.).

**Table 7.18. Differences between the groups on the psychological measures**

| Variable | Experimental n = 66 | Placebo n = 67 | Control n = 73 | *df* | *F* | *p* |
|---|---|---|---|---|---|---|
| ANX-I | 11.2 (3.8) | 10.2 (4.8) | 10.7 (3.7) | 2,198 | 0.841 | 0.433 |
| IHLC | 24.7 (3.8) | 23.2 (4.8) | 23.5 (4.8) | 2,200 | 2.294 | 0.104 |
| CHLC | 19.2 (5) | 20.3 (4.9) | 20 (4.5) | 2,201 | 0.948 | 0.389 |
| PHLC | 20.4 (6.3) | 19.9 (6) | 19.7 (6.5) | 2,200 | 0.253 | 0.777 |
| HOS-I | 3.3 (2) | 3.2 (2.4) | 3.2 (2.2) | 2,198 | 0.047 | 0.954 |
| HOS-B | 3.6 (2.6) | 4 (2.8) | 4 (2.7) | 2,198 | 0.544 | 0.581 |
| HOS-T | 6.9 (4) | 7 (4.6) | 7.3 (4) | 2,198 | 0.156 | 0.856 |
| RAS | 37.6 (8) | 36.3 (10.9) | 37.3 (8.3) | 2,192 | 0.319 | 0.727 |

[**Abbreviations**: Anx-I (pre-consultation state anxiety), IHLC (internal health locus of control), CHLC (chance health locus of control), PHLC (powerful others health locus of control), HOS-I (health opinion survey – information subscale), HOS-B (health opinion survey – behavioural subscale), HOS-T (health opinion survey – overall score), RAS (Rathus assertiveness schedule)].

### 7.2.5. Analysis of perceived health status between the groups

One-way ANOVA were used to determine whether there were any differences between the groups on the measures of patients perceived health status (SF-36). No significant differences were found between the groups on the measures of perceived health status.

**Table 7.19. Differences between the groups on perceived health status**

| Variable | Experimental n = 66 | Placebo n = 67 | Control n = 73 | *df* | *F* | *p* |
|---|---|---|---|---|---|---|
| PF | 73.8 (24.6) | 75.2 (23) | 75.2 (24.6) | 2,202 | 0.080 | 0.923 |
| RP | 63.6 (45.1) | 67.2 (42.9) | 77.3 (44.7) | 2,202 | 0.198 | 0.820 |
| RE | 73.3 (41.3) | 85.1 (34.5) | 77.3 (40.7) | 2,201 | 1.558 | 0.213 |
| SF | 83.2 (22.9) | 85.1 (21.5) | 86.6 (22.9) | 2,200 | 0.401 | 0.670 |
| MH | 70.2 (18.1) | 75 (17.4) | 71.5 (17.4) | 2,200 | 1.325 | 0.268 |
| EV | 52.5 (20.3) | 53.4 (24.4) | 52.6 (22.1) | 2,200 | 0.036 | 0.964 |
| P | 73.6 (27.4) | 69.3 (28.9) | 72.9 (25.3) | 2,201 | 0.479 | 0.620 |
| GHP | 58 (19.2) | 55.8 (24.1) | 59.3 (20.9) | 2,198 | 0.457 | 0.634 |
| PCS | 42.2 (11.6) | 41 (12) | 43 (11.3) | 2,197 | 0.482 | 0.618 |
| MCS | 48.6 (9.9) | 51.79 (9.6) | 49.4 (10.7) | 2,197 | 1.778 | 0.172 |

[**Abbreviations**: PF (physical functioning), RP (role limitation – physical), RE (role limitation – emotional), SF (social functioning), MH (mental health), EV (energy/vitality), P (bodily pain), GHP (general health perceptions), PCS (physical component summary), MCS (mental component summary)].

The allocation of a few extra patients to the control group did not result in introducing bias as no differences were found between the groups on any of the pre-consultation measures.

### 7.2.6. Analyses of demographic data by consultant

The data was also analysed to determine if there were differences using consultant seen as the grouping variable, ANOVA and Chi-square were used. Dr A saw 75 patients, Dr B = 36, Dr C = 39 and Dr D = 56. The analysis of the demographic data showed that there were no significant differences between the doctors in terms of patients' age ($F_{(3,202)} = 0.906$, $p = 0.439$) or number of years of full education ($F_{(3,198)} = 2.336$, $p = 0.075$).

**Table 7.20. Means (SD's) of age and education by doctor**

| Variable | Valid n | Dr A n = 75 | Dr B n = 36 | Dr C n = 39 | Dr D n = 56 |
|---|---|---|---|---|---|
| Age | 206 | 57.8 (15) | 58.5 (15.2) | 54 (14.1) | 58.9 (16) |
| Education (years) | 202 | 13.1 (4.4) | 14.3 (4.02) | 11.9 (3) | 12.6 (4.2) |

No significant differences were found between the doctors for patient sex ($x^2_{(3)} = 3.061$, $p = 0.382$), marital status ($x^2_{(15)} = 16.807$, $p = 0.331$), ethnic group ($x^2_{(21)} = 21.435$, $p = 0.433$), or English as a 1st language ($x^2_{(3)} = 0.663$, $p = 0.882$). The results show that there no significant differences were found on any of the demographic or pre-consultation measures according to which consultant the patients were seen by.

**Table 7.21. Frequencies of patients' gender, marital status, ethnicity and language by doctor**

| Variable | Dr A n = 75 | Dr B n = 36 | Dr C n = 39 | Dr D n = 56 |
|---|---|---|---|---|
| **Gender** n = 206 | | | | |
| Male | 37 | 21 | 21 | 36 |
| Female | 38 | 15 | 18 | 20 |
| **Marital status** n = 206 | | | | |
| Single | 10 | 7 | 10 | 17 |
| Married | 34 | 18 | 18 | 25 |
| Cohabiting | 6 | 1 | 5 | 4 |
| Separated | 2 | 1 | 2 | 0 |
| Divorced | 10 | 4 | 3 | 3 |
| Widowed | 13 | 5 | 1 | 7 |
| **Ethnicity** n = 205 | | | | |
| Black (African) | 2 | 0 | 1 | 2 |
| Black (Afro-C) | 2 | 0 | 0 | 2 |
| Asian (Indian) | 4 | 1 | 1 | 4 |
| Asian (African) | 0 | 0 | 0 | 0 |
| Oriental | 1 | 0 | 0 | 0 |
| White (UK) | 53 | 28 | 25 | 40 |
| White (Europe) | 8 | 4 | 11 | 5 |
| White (Other) | 0 | 1 | 1 | 2 |
| Other | 5 | 1 | 0 | 1 |
| **1st Language** n = 206 | | | | |
| English | 64 | 30 | 31 | 46 |
| Other | 11 | 6 | 8 | 10 |

### 7.2.7. Analysis of patients' prior experience with the medical profession by doctor

When doctor was used as a grouping variable no significant differences were found for number of visits to GP or number of outpatients appointments but a significant difference was found for number of patient hospitalisations ($F_{(3,174)} = 4.192$, $p = 0.007$). Scheffe Post-hoc comparisons showed that the difference was between Dr A and Dr C. This difference was due to a couple of extreme outliers in the number of hospitalisations of Dr A's patients. This difference was not pursued, as these measures were not planned to be used in any other analysis.

**Table 7.22. Patients' prior experience with the medical profession**

| Means (SD) | Dr A n = 75 | Dr B n = 36 | Dr C n = 39 | Dr D n = 56 |
|---|---|---|---|---|
| Visits to GP | 5.1 (3.3) | 4.2 (2.2) | 6.2 (5.2) | 5.1 (2.9) |
| Visits to outpatients | 3.5 (3.8) | 4.4 (5.9) | 4.6 (7.2) | 2.9 (3.4) |
| Number of hospitalisations | 4.3 (5.4) | 3.7 (3.5) | 2 (1.5) | 2.3 (2.3) |

### 7.2.8. Analysis of the psychological measures between the doctors

One-way ANOVA was used to determine whether there were any differences between the groups on the psychological measures. No significant differences were found between the doctors on any of these measures (Table 7.23.).

**Table 7.23. Between consultant analysis of the psychological measures**

| Variable | Dr A n = 73 | Dr B n = 36 | Dr C n = 39 | Dr D n = 56 | *df* | *F* | *p* |
|---|---|---|---|---|---|---|---|
| ANX-1 | 11.3 (4.6) | 10.2 (3) | 10.6 (4.3) | 10.4 (3.8) | 3,198 | 0.762 | 0.517 |
| IHLC | 23.6 (4.9) | 23.6 (4) | 24 (4.1) | 24.1 (4.6) | 3,199 | 0.190 | 0.903 |
| CHLC | 19.4 (5.2) | 20.1(4.2) | 19.4 (5) | 20.7 (4.3) | 3,200 | 0.932 | 0.426 |
| PHLC | 19 (6.6) | 19.7 (6.5) | 19.7 (6.1) | 21.5 (5.6) | 3,199 | 1.563 | 0.200 |
| HOS-I | 3 (2.2) | 3.4 (2.1) | 3.5 (2.1) | 3.2 (2.2) | 3,197 | 0.492 | 0.688 |
| HOS-B | 4.1 (2.7) | 3.4 (2.7) | 4.5 (3) | 3.4 (2.3) | 3,197 | 1.622 | 0.185 |
| HOS-T | 7.1 (4.4) | 6.8 (4) | 8 (4.3) | 6.6 (4) | 3,197 | 0.892 | 0.446 |
| RAS | 37.1 (8.3) | 37.5 (8.3) | 37.5 (9.8) | 36.6 (10.5) | 3,191 | 0.106 | 0.957 |

[**Abbreviations**: Anx-1 (pre-consultation state anxiety), IHLC (internal health locus of control), CHLC (chance health locus of control), PHLC (powerful others health locus of control), HOS-I (health opinion survey – information subscale), HOS-B (health opinion survey – behavioural subscale), HOS-T (health opinion survey – overall score), RAS (Rathus assertiveness schedule)].

### 7.2.9. Analysis of perceived health status between the doctors

One-way ANOVA was used to determine whether there were any differences between the doctors on the measures of patients perceived health status (SF-36). No significant differences were found between the doctors on the measures of perceived health status.

**Table 7.24. Between consultant analysis of patients' perceived health status (SF-36)**

| Variable | Dr A n = 73 | Dr B n = 36 | Dr C n = 39 | Dr D n = 56 | *df* | *F* | *p* |
|---|---|---|---|---|---|---|---|
| PF | 74.9 (23.3) | 74.2 (22.6) | 76.9 (23.6) | 73.5 (27.5) | 3,201 | 0.165 | 0.920 |
| RP | 71 (42.2) | 70.8 (41.6) | 69.2 (44.2) | 56.3 (47.3) | 3,201 | 1.436 | 0.233 |
| RE | 77 (40.1) | 81 (37.3) | 75.1 (41.7) | 81.6 (37.6) | 3,200 | 0.283 | 0.838 |
| SF | 84.3 (23) | 87 (22.1) | 86.6 (21.2) | 83.8 (23) | 3,199 | 0.224 | 0.880 |
| MH | 71.2 (18.7) | 74.8 (17.6) | 69.5 (17.4) | 73.9 (17.1) | 3,199 | 0.783 | 0.505 |
| EV | 52.7 (23.5) | 50.3 (25.2) | 50.4 (19) | 56.4 (20.5) | 3,199 | 0.771 | 0.511 |
| P | 73.1 (25.4) | 72.8 (28.7) | 71.4 (25.3) | 70.2 (30) | 3,200 | 0.138 | 0.937 |
| GHP | 56.3 (23.3) | 55.4 (19) | 57.7 (20.3) | 61.2 (20.9) | 3,197 | 0.734 | 0.533 |
| PCS | 43 (10.6) | 41.3 (12.4) | 43.4 (11.2) | 40.5 (12.8) | 3,196 | 0.695 | 0.556 |
| MCS | 49.1 (10.6) | 50.8 (10.4) | 48.2 (10.3) | 51.6 (9.1) | 3,196 | 1.074 | 0.361 |

[**Abbreviations**: PF (physical functioning), RP (role limitation – physical), RE (role limitation – emotional), SF (social functioning), MH (mental health), EV (energy/vitality), P (bodily pain), GHP (general health perceptions), PCS (physical component summary), MCS (mental component summary)].

In this study it was not possible to randomly allocate patients to doctors, however, this analysis shows that there were no significant differences on these measures between patients of each of the doctors.

**SECTION 3. Between group analyses of the process of communication and the measures of outcome.**

### 7.3.1. Introduction

The first aim of this study was to determine whether a video intervention could be successful in facilitating an improvement in patient communication with doctors in an outpatient clinic and to determine whether the intervention would have an effect on patient outcomes. The results in this section have been presented in terms of both the process of communication and the outcomes of the consultations, with each analysis subsumed under the heading of the relevant hypothesis.

### 7.3.2. The effects of the intervention on the process of communication

One-way ANOVA was used to establish whether there were differences between the experimental groups on the process of communication measures; the three VRM modes of patient Questions, Disclosures and Reflections, the number of utterances spoken and the duration of the consultations.

The following three hypotheses relate to the VRM categories of patient Questions, Disclosures and Reflections.

**Hypothesis: Experimental group patients will ask more questions.** (VRM category – Questions)

**Hypothesis: Experimental group patients will express more concerns and worries.** (VRM category – Disclosure)

**Hypothesis: Experimental group patients will make more attempts to clarify information when it has not been understood.** (VRM category – Reflection)

The results showed that patients in the experimental group did ask slightly more Questions and made more Disclosures and Reflections than patients in the control groups, but none of these reached significance (Table 7.25.).

**Table 7.25. Results of patients VRM categories by group**

| VRM categories | Experimental Mean (SD) | Placebo Mean (SD) | Control Mean (SD) | *df* | *F* | *p* |
|---|---|---|---|---|---|---|
| Questions - H | 1.6 (1.7) | 1.8 (1.9) | 2.1 (2.4) | 2,174 | 1.594 | 0.553 |
| Questions - C | 3.6 (4.2) | 2.8 (2.8) | 2.8 (2.7) | 2,174 | 0.240 | 0.787 |
| Questions - T | 5.2 (4.7) | 4.7 (3.5) | 4.9 (4) | 2,178 | 0.078 | 0.925 |
| Disclosures - H | 45.3 (30.1) | 44.8 (27.3) | 41 (27.3) | 2.174 | 0.437 | 0.647 |
| Disclosures - C | 15 (13.4) | 12.9 (9.3) | 10.6 (7.1) | 2,174 | 1.619 | 0.201 |
| Disclosures - T | 61 (38) | 58 (33) | 52 (32) | 2,178 | 1.000 | 0.370 |
| Reflections - H | 0.7 (1.2) | 0.5 (0.7) | 0.7 (1) | 2,174 | 0.110 | 0.869 |
| Reflections - C | 1.4 (1.9) | 1.3 (2) | 0.8 (1.2) | 2,174 | 0.799 | 0.451 |
| Reflections - T | 2.0 (2.2) | 1.9 (2.3) | 1.6 (2) | 2,178 | 0.461 | 0.632 |

[**Abbreviations**: H = history, C = conclusion, T = total score]

**Hypothesis: Experimental group patients will take a more verbally active role in the consultation by talking more.**

The means for number of patient utterances, number of doctor utterances, the total number of utterances and consultation length were slightly higher in all cases for the experimental group in comparison to both the control groups, with the exception of patient utterances and doctor utterances in the history-taking segment, where the mean for the placebo control group was the highest (Table 7.26.).

**Table 7.26. Results of number of doctor and patients utterances by group**

| Utterances | Experimental Mean (SD) | Placebo Mean (SD) | Control Mean (SD) | *df* | *F* | *p* |
|---|---|---|---|---|---|---|
| Patient - H | 115 (69) | 119 (56) | 113 (57) | 2,174 | 0.149 | 0.862 |
| Doctor - H | 94 (37) | 102 (43) | 89 (34) | 2,174 | 1.549 | 0.215 |
| Patient - C | 51 (42) | 44 (33) | 41 (30) | 2,174 | 1.298 | 0.276 |
| Doctor - C | 76 (44) | 66 (46) | 60 (24) | 2,174 | 2.435 | 0.091 |
| Patient - T | 167 (100) | 163 (81) | 155 (74) | 2,178 | 0.237 | 0.761 |
| Doctor - T | 170 (70) | 168 (77) | 150 (47) | 2,178 | 1.517 | 0.222 |

[**Abbreviations**: H = history, C = conclusion, T = total score]

The results showed that there was no significant differences between the groups for either patient or doctor utterances in the history, conclusion or overall in the consultations.

**Hypothesis: Experimental group patients will have longer consultations.**

The results of this analysis showed that there were no significant differences between the groups in either the history-taking the concluding segment or overall in terms of length of time. The mean length of the overall consultations as well as the history and conclusion were slightly higher in all cases for the experimental group in comparison to both the control groups (Table 7.27.).

**Table 7.27. Results of length of consultation by experimental group**

| Time (secs) | Experimental Mean (SD) | Placebo Mean (SD) | Control Mean (SD) | *df* | *F* | *p* |
|---|---|---|---|---|---|---|
| Length - H | 448 (210) | 433 (190) | 428 (173) | 2,172 | 0.163 | 0.850 |
| Length - C | 284 (183) | 240 (174) | 230 (101) | 2,172 | 1.832 | 0.163 |
| Length - T | 732 (352) | 698 (326) | 662 (223) | 2,178 | 0.682 | 0.507 |

[**Abbreviations**: H = history, C = conclusion, T = total length]

The proportion of doctor and patient talk was very similar with doctors contributing 50.2% of the utterances. As mentioned previously (page 177) the length of the consultations was directly related to the number of utterances. Therefore, either of these variables could be considered to represent an equivalent measure of overall patient participation.

Overall, the results of the analysis of the process variables did not support the hypotheses. The experimental group patients did not significantly demonstrate greater participation of in terms of the three specific VRM modes, number of utterances or consultation length. However, in most instances there was a tendency for higher mean scores in the experimental group.

### 7.3.3. The effects of the intervention on the outcomes of the consultation

One-way ANOVA was used to establish whether there were differences between the experimental groups on the outcomes measures; patient satisfaction, recovery locus of control and patients perceived ability to communicate. A repeated measures ANOVA was used to assess the impact of the intervention on patient anxiety.

**Hypothesis: Experimental group patients ~~(in the)~~ will be more satisfied.**

The results of this analysis showed that there were no significant differences between the groups on the four sub-scales and total score of the MISS. The video intervention did not increase patient satisfaction in the experimental group. For comparative purposes a percentage score was calculated (mean score (154)/maximum possible score (203) = 76%).

**Table 7.28. Results of patient satisfaction by group**

| Variable | Experimental Mean (SD) | Placebo Mean (SD) | Control Mean (SD) | *df* | *F* | *p* |
|---|---|---|---|---|---|---|
| MISS - DR | 57 (10) | 56 (9.1) | 57.1 (9.8) | 2,202 | 0.172 | 0.870 |
| MISS - CC | 21.8 (3.7) | 22 (4.1) | 21.8 (3.8) | 2,202 | 0.073 | 0.929 |
| MISS - R | 53 (9) | 54.6 (7.9) | 54.1 (7.9) | 2,202 | 0.472 | 0.624 |
| MISS - CI | 21.3 (3.4) | 21.7 (3.6) | 21.1 (4) | 2,202 | 0.502 | 0.606 |
| MISS - total | 153.3 (24.3) | 154.5 (22) | 154 (22.5) | 2,202 | 0.045 | 0.956 |

[**Abbreviations:** MISS subscales - DR = Distress Relief CC = Communication Comfort R = Rapport CI = Compliance Intent]

**Hypothesis: Experimental group patients will be less anxious post-consultation.**

To test the hypothesis relating to patient anxiety, a repeated measures ANOVA (mixed-design) was used. The within-subject factor was state anxiety, measured pre- and post-consultation and the between-subject factor was experimental group. The main effect of anxiety was not significant ($F_{(1,189)} = 0.801$, $p = 0.372$). The group by time (pre- and post-consultation) interaction was not significant ($F_{(2,189)} = 1.191$, $p = 0.306$). The main effect of group was not significant ($F_{(2,189)} = 1.502$, $p = 0.225$). Means and SD's shown for pre- and post-consultation anxiety shown in Table 7.29.

**Table 7.29. Means (SD's) of patient anxiety by group**

| | Experimental | Placebo | Control |
|---|---|---|---|
| Pre-consultation anxiety | 11.1 (3.9) | 10.1 (4.6) | 10.6 (3.8) |
| Post-consultation anxiety | 10.4 (4.1) | 9.7 (3.7) | 11 (3.3) |

**Hypothesis: Experimental group patients will have a greater sense of control over their recovery.**

No significant differences were found between the groups. Patients in the experimental group did not report a greater sense of control over their recovery (Table 7.30.).

**Table 7.30. Results of Recovery Locus of Control and patients' perceived ability to communicate**

| Variable | Experimental Mean (SD) | Placebo Mean (SD) | Control Mean (SD) | *df* | *F* | *p* |
|---|---|---|---|---|---|---|
| Recovery locus of control | 34 (4.3) | 32.6 (5) | 34.3 (4.8) | 2,195 | 2.570 | 0.079 |
| Perceived ability to communicate | 17 (2.4) | 16.8 (2.6) | 16.7 (2.9) | 2,199 | 0.139 | 0.870 |

**Hypothesis: Experimental group patients will show greater perceived ability to communicate with their doctor.**

The results showed that there were no significant differences between the groups. Patients in the experimental group did not perceive that they communicated more effectively than patients in the control groups (Table 7.30.).

### 7.3.4. Results of analyses of data from the 4-6 week follow-up questionnaire

One-way ANOVA was used to establish whether there were differences between the experimental groups on the data gathered 4-6 week post-consultation. These were recall and understanding, adherence, two subscales from the SF-36 Role Limitation Physical and Mental Health, and patients perceptions of receiving sufficient information and reassurance.

**Hypothesis: Experimental group patients will demonstrate a greater recall and understanding of their condition and of advice given.**

This hypothesis was not supported as the results show that there were no significant differences found between the groups on recall of diagnosis, recall of other health recommendations or on patients' understanding of information received. Although, recall of diagnosis was very close to reaching significance.

**Table 7.31 Results of recall and understanding**

| Variable | Experimental Mean (SD) | Placebo Mean (SD) | Control Mean (SD) | *df* | *F* | *p* |
|---|---|---|---|---|---|---|
| Recall of diagnosis | 2.97 (1.81) | 3.81 (1.72) | 3.81 (1.56) | 2,112 | 3.028 | 0.052 |
| Recall of other recommendations | 1.36 (0.76) | 1.60 (0.88) | 1.51 (0.86) | 2,111 | 0.746 | 0.476 |
| Understanding | 4.15 (1.14) | 3.98 (1.25) | 4.32 (0.82) | 2,147 | 1.380 | 0.255 |

**Hypothesis: Experimental group patients will show greater self-reported adherence to treatment recommendations**

There were no significant differences between the groups on these measures of self-reported adherence. The experimental group patients were not more adherent to medications or any other treatment recommendations (Table 7.32.).

**Table 7.32. Results of adherence**

| Variable | Experimental Mean (SD) | Placebo Mean (SD) | Control Mean (SD) | *df* | *F* | *p* |
|---|---|---|---|---|---|---|
| Adherence - medications | 4.9 (0.2) | 4.4 (1.1) | 4.3 (1.3) | 2,60 | 1.764 | 0.180 |
| Adherence – other recommendations | 3.7 (1.5) | 3.6 (1.3) | 3.6 (1.4) | 2,60 | 0.021 | 0.979 |

**Hypothesis: Experimental group patient will show a greater improvement in health status four to six weeks post-consultation**

Patients in the experimental group had a higher mean score for role limitation physical over patients in the other two groups, suggesting better physical functioning for the experimental group, but this did not translate into a significant difference between the groups. There was no significant differences found between the groups for the mental health subscale of the SF-36.

**Table 7.33. Results of the Role Limitation Physical and Mental Health sub-scales of the SF-36**

| Variable | Experimental Mean (SD) | Placebo Mean (SD) | Control Mean (SD) | *df* | *F* | *p* |
|---|---|---|---|---|---|---|
| Role limitations - P | 76.2 (36.2) | 66.5 (41.7) | 67 (41.5) | 2,132 | 0.799 | 0.452 |
| Mental health | 68.3 (18.1) | 70.3 (19.3) | 68.1 (17) | 2,129 | 0.205 | 0.815 |

A paired t-test was used to explore whether there were any differences in patients' perceived Role Limitation Physical and Mental Health from the pre-consultation assessment and the follow-up assessment. The results showed there were no significant difference for Role Limitation Physical ($t_{(133)} = 0.479$, $p = 0.633$), but a significant difference was found for the Mental Health sub-scale ($t_{(128)} = 2.084$, $p = 0.039$) at follow-up. This showed that the patients had lower scores on this measure 4-6 weeks following their appointment.

Patients were asked whether they felt they had received enough information about their condition from the doctor and whether they felt reassured. There were no significant differences found between the groups for whether sufficient information had been received or whether patients felt reassured about their condition.

**Table 7.34. Results of information and reassurance**

| Variable | Experimental Mean (SD) | Placebo Mean (SD) | Control Mean (SD) | *df* | *F* | *p* |
|---|---|---|---|---|---|---|
| Information | 2.6 (0.74) | 2.6 (0.6) | 2.8 (0.6) | 2,152 | 0.643 | 0.527 |
| Reassurance | 3.7 (1.23) | 3.5 (1) | 3.7 (1) | 2,150 | 0.727 | 0.485 |

### 7.3.5. Expectation of outcome

Patients were asked whether the outcome of their appointment was what they expected, with a simple Yes/No response. 70% responded 'Yes', and 30% responded 'No'. This percentage was reflected by each of the groups with 70% 'Yes', 30% 'No' in the experimental group, 73% 'Yes', 27% 'No' in the placebo control group and 68% 'Yes' and 32% 'No' in the control group. Patient satisfaction mean scores on the MISS were higher for the 'Yes' group for all the subscales and overall score. The mean difference between patients who said 'Yes' or 'No' for Distress Relief was 5.45, Communication Comfort 2.69, Rapport 3.34, Compliance Intent 2.02 and for the overall score the mean difference was 13.49 (Table 7.35.).

**Table 7.35. Descriptives of expectation of outcome and patient satisfaction**

| MISS | Expectation of outcome | n | Mean | SD |
|---|---|---|---|---|
| Distress relief | NO | 46 | 52.70 | 9.80 |
| | YES | 108 | 58.15 | 9.16 |
| Communication comfort | NO | 46 | 20 | 4.05 |
| | YES | 108 | 22.69 | 3.68 |
| Rapport | NO | 46 | 51.67 | 9.33 |
| | YES | 108 | 55.01 | 7.75 |
| Compliance intent | NO | 46 | 19.89 | 3.25 |
| | YES | 108 | 21.91 | 3.88 |
| MISS – total score | NO | 46 | 144.26 | 23.81 |
| | YES | 108 | 157.75 | 21.52 |

**Hypothesis: Patients whose expectations of the outcome of their appointment were met would be more satisfied than those whose expectations were not met.**

Chi-square analysis indicated that there was no relationship between the experimental groups and patient expectations being met ($x^2_{(2)} = 0.334$, $p = 0.846$). Independent samples t-tests showed that there were significant differences in terms of patient satisfaction between patients for whom the outcome of their appointment was as they expected and those where the outcome was not as they expected (Table 7.36.). Patients who reported that the outcome of the consultation was what they expected were significantly more satisfied then those whose expectations of outcome were not met, on all subscales and the overall score of the Medical Interview Satisfaction Scale.

**Table 7.36. Expectation of outcome and patient satisfaction**

| MISS | *df* | *t* | *p* |
|---|---|---|---|
| Distress relief | 152 | -3.321 | 0.001 |
| Communication comfort | 152 | -4.019 | 0.000 |
| Rapport | 152 | -2.296 | 0.023 |
| Compliance intent | 152 | -3.093 | 0.002 |
| Overall score | 152 | -3.448 | 0.001 |

### 7.3.6. Patients' explanation for expectations of outcome not being met

If patients had responded 'No' to whether the outcome of their appointment was what they expected they were invited to state the reason why. The following is a description of these findings. Of the 46 patients who responded 'No,' 42 patients made comments, with three making two comments, resulting in 45 comments. The patient comments were grouped together and categorised into a number of distinct areas. The reliability of these categories were checked by another researcher. Total agreement was found for 43 items, and with discussion the final two items were agreed on. The patients were fairly equally distributed among the experimental groups (Experimental = 14, Placebo control

= 13, Control = 19). The distribution of patients between the consultants was Dr A = 21, Dr B = 3, Dr C = 8, and Dr D = 13. This indicates that 28% of Dr A's patients, 8.3% of Dr B's, 20.5% of Dr C's and 23.2% of Dr D's commented on their consultation with patients of Dr B making the least number of comments. These figures are roughly proportionate to the number of patients seen by each doctor initially, in that, Dr's A and D had more patients responding than Dr's B and C. Five categories of explanations that emerged were; communication, diagnostic tests, waiting times, diagnosis, and other.

The category that attracted the most comments was 'communication' with 13 (29%) patients' expecting a better explanation of their problem and one expecting more advice. The next most frequently raised issue was that of 'waiting' too long, particularly for tests and results. This did not relate to waiting for tests on the day of the appointment, but for appointments for diagnostic tests in the future and obtaining these results. Five comments related specifically to tests, three to tests and results, one for results, and one for treatment (surgery). The third category was 'diagnostic tests' where seven patients reported expected to have diagnostic tests or more tests than they received. Other comments related to 'diagnosis' with four patients either receiving or not receiving the diagnosis that they expected. A number of different comments were grouped together under the umbrella heading of 'other'. Two patients expected either a change in their medications, or advice about medications. Two patients expected the seriousness of their condition to be worse than it actually turned out to be, and one expected the outcome to be good, suggesting that for this particular patient the outcome was actually not so good. One patient reported that they were not physically examined when they had expected an examination, and one patient felt that the amount of discussion surrounding their emotional status was inappropriate. The last comments in the 'other' category were from three patients that were unsure about what they expected the outcome to be.

## SECTION 4. The role of individual patient differences on the process of communication, the outcomes and the intervention.

### 7.4.1. Introduction

The second aim of this study was to examine the role of individual patient differences on the consultation process, the outcomes of the consultation, and the intervention. The relative contribution of these variables and the intervention on the patients' verbal contribution to the consultation and patient satisfaction were also examined. The individual patient differences of particular interest in this study were demographics (age, education, gender and English spoken as a first language) anxiety, perceived health status, sense of control over health, preference for involvement in health care and assertiveness. Associations between the pre-consultation measures and post-consultation measures were examined separately, followed by an examination of the relationship between the pre-consultation measures and process measures, and pre-consultation measures and outcome measures.

### 7.4.2. Correlations between the independent variables

A matrix of Pearson (2-tailed) correlation coefficients was generated and included all measures with continuous scores. The results show that there were a number of significant relationships between the independent variables. Only those significant at the $p<0.01$ level were considered significant to account for multiple comparisons (Table 7.37.). Variables significant at $p<0.05$ level are also shown in the tables. Older patients had fewer years in full time education, had higher scores on Chance and Powerful others Health Locus of Control, but lower scores on preference for involvement in health care and assertiveness as well as poorer Physical Functioning. Patients who had a greater number of years in education had lower scores on Chance and Powerful others Health Locus of Control but showed a greater preference for involvement in health care.

There were also a number of significant positive relationships between education and several dimensions of perceived health status. Patient with higher pre-consultation anxiety scores were associated with poorer perceived health status on all dimensions of the SF-36, excluding pain perception. Patients with higher scores for Internal Health Locus of Control showed better perceived health over most dimensions of the SF-36. Patients with higher scores on both Chance and Powerful other Health Locus of Control showed less preference for involvement in health care and had lower scores on assertiveness. Higher scores on the Powerful Other Scale was also associated with poorer Physical Functioning. Higher scores on preference for involvement in health care are also positively associated with assertiveness, in particular the information subscale. Assertiveness was also shown to be positively associated with the Physical Component Summary of the SF-36. There were no significant correlations between the Internal Health Locus of Control scale and Chance or Powerful Others suggesting that it is orthogonal, but the Chance and Powerful Others were related. Both subscales of the Health Opinion Survey were significantly correlated with each other and highly correlated with the total score.

**Table 7.37. Correlations between pre-consultation variables**

| | Age | Educ | Pre-anx | IHLC | CHLC | PHLC | HOS-I | HOS-B | HOS-T | RAS |
|---|---|---|---|---|---|---|---|---|---|---|
| **Age** | | | | | | | | | | |
| **Educ** | -.39** | | | | | | | | | |
| **Pre-anx** | | | | | | | | | | |
| **IHLC** | | | | | | | | | | |
| **CHLC** | .25** | -.21** | | | | | | | | |
| **PHLC** | .44** | -.35** | | | .22** | | | | | |
| **HOS-I** | -.36** | .31** | | | -.25** | -.37** | | | | |
| **HOS-B** | -.37** | .25** | | | -.23** | -.66** | .46** | | | |
| **HOS-T** | -.43** | .32** | | | -.28** | -.61** | .83** | .88** | | |
| **RAS** | -.21** | .16* | -.16* | | -.28** | -.19** | .47** | .22** | .39** | |
| **PF** | -.34** | .35** | -.29** | .17* | | -.19** | .16* | | .15* | .17* |
| **RP** | | .17* | -.28** | .19** | | | | .18** | .2** | .2* |
| **RE** | | | -.27** | | | | | | | |
| **SF** | | .14* | -.18** | .31** | .14* | | | | | |
| **MH** | | | -.52** | .15* | | | | | | |
| **EV** | | .23** | -.26** | .24** | | | | | | .17* |
| **P** | | | | .18* | | | | | | .15* |
| **GHP** | | .15* | -.30** | .27** | | -.16* | | | | |
| **PCS** | -.26** | .28** | -.22** | .24** | | -.22** | .17* | .17* | .18* | .2** |
| **MCS** | | | -.38** | .17* | .15* | | | | | |

* Significant at the 0.05 level (2-tailed) ** Significant at the 0.01 level (2-tailed)
[**Abbreviations:** Educ = number of years in full-time education, Pre-anx = pre-consultation anxiety, IHLC, CHLC, PHLC = Internal, Chance and Powerful Other Health Locus of Control. HOS-I, B & T = Health Opinion Survey (information, behaviour and total scores), RAS = Rathus Assertiveness Schedule. Perceived health status (SF-36). PF = physical function, RP = role limitation – physical, RE = role limitation – emotional, SF = social functioning, MH = mental health, EV = energy/vitality, P = bodily pain, GHP = general health perceptions, PCS = physical component summary, MCS = mental component summary.

Significant correlations were found between all dimensions of patients' perceived health status (Table 7.38.) but the lowest was found between the Mental Component Summary and the Physical Component Summary, suggesting that these constructs are largely independent.

**Table 7.38. Correlations between the dimensions of the SF-36**

| | PF | RP | RE | SF | MH | EV | P | GHP | PCS |
|---|---|---|---|---|---|---|---|---|---|
| **PF** | | | | | | | | | |
| **RP** | .45** | | | | | | | | |
| **RE** | .37** | .49** | | | | | | | |
| **SF** | .45** | .52** | .59** | | | | | | |
| **MH** | .3** | .37** | .55** | .5** | | | | | |
| **EV** | .56** | .44** | .45** | .58** | .51** | | | | |
| **P** | .47** | .41** | .32** | .5** | .18** | .44** | | | |
| **GHP** | .52** | .28** | .28** | .33** | .34** | .58** | .3** | | |
| **PCS** | .82** | .7** | .3** | .55** | .2** | .58** | .73** | .58** | |
| **MCS** | .3** | .38** | .8** | .67** | .85** | .64** | .17* | .37** | .14* |

* Significant at the 0.05 level (2-tailed)
** Significant at the 0.01 level (2-tailed)

[**Abbreviations:** Perceived health status (SF-36). PF = physical function, RP = role limitation – physical, RE = role limitation – emotional, SF = social functioning, MH = mental health, EV = energy/vitality, P = bodily pain, GHP = general health perceptions, PCS = physical component summary, MCS = mental component summary]

### 7.4.3. Correlations between post-consultation measures

Recovery Locus of Control was associated with lower scores on anxiety and with higher scores on patients' perceived ability to communicate and the Distress Relief, Rapport, and the total score of the MISS. Greater post-consultation anxiety was associated with lower perceived ability to communicate, and lower satisfaction scores on all subscales and overall. Patients' perceived ability to communicate was positively associated with all subscales of the MISS but the most highly with the overall score. Scores on all the sub-scales of the MISS were highly correlated.

**Table 7.39. Correlations between the post-consultation measures**

| | RLOC | Post-anx | PAC | MISS-DR | MISS-CC | MISS-R | MISS-CI |
|---|---|---|---|---|---|---|---|
| **RLOC** | | | | | | | |
| **Post-anx** | -.21** | | | | | | |
| **PAC** | .28** | -.24** | | | | | |
| **MISS-DR** | .24** | -.37** | .56** | | | | |
| **MISS-CC** | .16* | -.28** | .56** | .7** | | | |
| **MISS-R** | .21** | -.3** | .58** | .77** | .75** | | |
| **MISS-CI** | | -.44** | .45** | .65** | .64** | .59** | |
| **MISS-Tot** | .22** | -.39** | .62** | .93** | .85** | .92** | .76** |

* Correlation is significant at the 0.05 level (2-tailed)
** Correlation is significant at the 0.01 level (2-tailed)

[**Abbreviations:** RLOC = Recovery locus of control, Post-anx = Post consultation anxiety, PAC = Patients' perceived ability to communicate, MISS = Medical interview satisfaction scale (DR = distress relief, CC = communication comfort, R = rapport, CI = compliance intent, Tot = total score]

### 7.4.4. Individual patient differences and process measures

The pre-consultation measures were correlated (Pearson - 2-tailed) with the process measures of the consultations, in terms of the duration and number of patient utterances. Duration of the consultations includes the doctors' contribution to the consultation, and the amount of talk contributed to the consultations represents solely the patients' input. The correlation coefficients and level of significance are displayed in Table 7.40. Patient education was only shown to be related to the length of the history taking-segment, while pre-consultation anxiety was positively associated with both time and utterances with more anxious patients having longer consultations and talking more. There was little association overall between the measures of health cognitions and process measures with the exception of the Internal Health Locus of Control Scale which was negatively associated total consultation time. The Health Opinion Survey information subscale was positively associated with the overall length of time and patient utterances in the conclusion and the total patient utterances. More significant relationships were found for the measures of health status and the process measures.

Patients with lower scores (poorer health) on the Role Physical and Emotional, Mental Health, Energy/Vitality, General Health Perceptions and the Mental Component Summary had longer consultations. Patients with lower scores on the Role Emotional, Mental Health subscales and the Mental Component Summary score talked more in the consultations. Patients with higher anxiety scores made more Disclosures. Most of the correlations were significant and the $p<0.05$ level with few significant at the $p<0.01$ level. Although these correlations reached significant levels, generally they were low.

**Table 7.40. Correlations between pre-consultation and process measures**

| | Time-H | Time-T | Patient U's - H | Patient U's - C | Patient U's - T | Patient D's- T | Patient Q's - T | Patient R's - T |
|---|---|---|---|---|---|---|---|---|
| **Educ** | .17* | | | | | | | |
| **Anx** | .19* | .19* | .19* | | .17* | .2* | .16* | .17* |
| **IHLC** | | -.18* | | | | | | |
| **HOS-I** | | .18* | | .18* | .19* | | .2* | |
| **RP** | | -.18* | | | | -.19* | | -.19* |
| **RE** | -.22** | -.16* | -.2* | | -.18* | -.17* | | |
| **SF** | | | | | | -.16* | | |
| **MH** | -.18* | | -.2** | | -.17* | -.18* | | |
| **EV** | -.2* | -.21** | | | | | | |
| **GHP** | -.18* | -.19* | | | | -.19* | | |
| **PCS** | | | | | | -.16* | | -.16* |
| **MCS** | -.26** | -.2** | -.21** | | -.2* | -.17* | | |

* Significant at the 0.05 level (2-tailed) ** Significant at the 0.01 level (2-tailed)
[**Abbreviations**: Anx = pre-consultation anxiety, IHLC = Internal Health Locus of Control, HOS-I = Health Opinion Survey (information subscale). Perceived health status (SF-36). RP = role limitation – physical, RE = role limitation – emotional, SF = social functioning, MH = mental health, EV = energy/vitality, GHP = general health perceptions, PCS = physical component summary, MCS = mental component summary. H = history, C = conclusion, T = total (history + conclusion) U = utterances, D = Disclosures, Q = Questions, R = Reflections]

No significant correlations were found for patient age, Chance or Powerful Others Locus of Control, the Health Opinion Survey (behaviour and total score), the Rathus Assertiveness Schedule, or for two of the SF-36 scales, Physical Functioning and Pain.

None of the pre-consultation measures were significantly correlated with length of the concluding segment.

T-tests were used to explore whether there were any differences in total consultation time, number of patient utterances, Disclosures, Questions and Reflections by patient gender and English as a first language. No significant differences were found for patient gender, but a significant differences was found for English as first language and Reflections ($t_{(153)} = 2.624$, $p<0.05$). Patients whose first language was not English almost reached significance regarding Questions ($t_{(153)} = 1.909$, $p = 0.058$). In both cases, patients whose first language was not English made more Reflections and asked more Questions.

### 7.4.5. Predictors of the total number of patient utterances

A hierarchical multiple regression was used to assess whether individual patient characteristics or the experimental groups predicted the greatest variance in a measure of the process of communication. For this purpose the total number of patient utterances was chosen as the dependent measure as it includes the VRM categories of Questions, Disclosures and Reflections but also includes all other VRM categories and therefore measures the patients total verbal contribution to the consultation.

Variables were selected for entry into the regression if they correlated with the total number of patient utterances at the $p<0.05$ level. The variables that were found to be significantly correlated with the total number of patient utterances were pre-consultation anxiety, the information subscale of the Health Opinion Survey (HOS), two of the SF-36 subscales (Role Emotional and Mental Health) and the Mental Component Summary score (MCS). Both the Role Emotional and the Mental Health sub-scales of the SF-36

were highly correlated with Mental Component Summary score ($r$ = 0.8, $p$<0.01; $r$ = 0.85, $p$<0.01) respectively. To avoid the problems of multicollinearity only the MCS score was used, as both these subscales are used to derive this score and it correlated the most highly with the total number of patient utterances. In addition, to assess the relative contribution of intervention to the total number of patient utterances, dummy variables were created to represent the experimental groups in order to permit their entry into the equation. To assess the relationship between the variables entered into the regression the collinearity statistics were checked and found to be acceptable (tolerance .763-.998). Tolerance values range from 0-1 and the closer to zero the tolerance value is for a variable, the stronger the relationship between this and the other predictor variables (Brace, Kemp & Snelgar, 2000).

In the first block the individual patient characteristics of pre-consultation anxiety, the information subscale of the HOS and the MCS score of the SF-36 were entered into the equation using the standard (enter method), which enters this group of predictor variables simultaneously into the equation. In the second block the experimental group and the placebo control group were entered simultaneously, the control group was used as the reference group. The variables were entered into the equation in this order to see whether the intervention explained variance over and above the individual differences.

The individual patient differences accounted for 7.1% of the variance in the total number of patient utterances on block one of the regression ($R^2$ = .090, $R^2_{adj}$ = 0.071, $F_{(3,140)}$ = 4.637, $p$<0.01), although only the information subscale of the HOS was a significant predictor ($\beta$ = .181, $p$<0.05) (Table 7.41). This indicates that individuals with a greater desire for information in the consultation are more verbally active. The addition of the experimental groups failed to increase the amount of variance explained

by the individual patient differences ($\Delta R^2 = .010$, $\Delta F_{(2,138)} = .756$, NS). Overall, adding the experimental groups reduced the variance in the total number of patient utterances to 6.8% ($R^2_{adj} = 0.068$).

In summary, only the information subscale of the HOS was significant predictor of the total number of patient utterances. Pre-consultation anxiety, the Mental Component Summary score of the SF-36 and the experimental groups were not significantly predictive of the total number of patient utterances.

**Table 7.41. Predictors of the total number of patient utterances**

| Predictor variable | Beta[§] (standardised) | t-value | Sig. | $R^2$ | Adj. $R^2$ |
|---|---|---|---|---|---|
| ***Block 1*** | | | | .090 | .071 |
| Anxiety | .120 | 1.372 | .172 | | |
| HOS-information | .181 | 2.241 | .027 | | |
| MCS (SF-36) | -.160 | -1.822 | .071 | | |
| ***Block 2*** | | | | .100 | .068 |
| Experimental group | .097 | 1.048 | .297 | | |
| Placebo control group | .098 | 1.064 | .289 | | |

[§] = Beta value on entry in equation

### 7.4.6. Correlations between pre- and post-consultation variables

A number of pre-consultation variables were found to be significantly correlated with the post-consultation variables although most of the correlations were low (Table 7.42.). Internal Locus of Control was positively associated with Recovery Locus of Control and the opposite was found for the Chance Locus of Control Scale. Pre-consultation anxiety was positively associated with post-consultation anxiety but negatively associated with three of the MISS subscales and the overall score. Powerful Others Locus of Control was negatively associated with Communication Comfort. Physical Functioning was negatively related to post-consultation anxiety and positively related to Distress Relief. Role Physical was negatively associated with post-consultation anxiety.

Mental Health was negatively correlated with post-consultation anxiety and positively associated with all dimensions of the MISS. Energy/Vitality followed a similar pattern but was not related to Communication Comfort. General Health Perceptions was negatively related to post-consultation anxiety and positively associated with Distress Relief, Compliance Intent and the MISS overall score. The Mental Component Summary was negatively associated with post-consultation anxiety but positively associated with all the dimensions of the MISS.

**Table 7.42. Correlations between pre- and post-consultation measures**

| | RLOC | Post-ANX | MISS-DR | MISS-CC | MISS-R | MISS-CI | MISS-Tot |
|---|---|---|---|---|---|---|---|
| **Pre-ANX** | | .52** | -.17* | -.18* | | -.22** | -.18** |
| **IHLC** | .44** | | | | | | |
| **CHLC** | -.15* | | | | | | |
| **PHLC** | | | | -.18* | | | |
| **PF** | | -.18* | .14* | | | | |
| **RP** | | -.21** | | | | | |
| **RE** | | -.18* | | .16* | .16* | | .15* |
| **SF** | | | | | .17* | | .15* |
| **MH** | | -.54** | .19** | .2** | .17* | .34** | .23** |
| **EV** | .16* | -.32** | .21** | | .15* | .25** | .21** |
| **P** | | | .14* | | | | |
| **GHP** | | -.36** | .16* | | | .24** | .17* |
| **MCS** | | -.41** | .18** | .19** | .22** | .29** | .24** |

* Significant at the 0.05 level (2-tailed) ** Significant at the 0.01 level (2-tailed)
[**Abbreviations:** Anx = pre-consultation anxiety, IHLC, CHLC, PHLC = Internal, Chance and Powerful Other Health Locus of Control. Perceived health status (SF-36). PF = physical function, RP = role limitation – physical, RE = role limitation – emotional, SF = social functioning, MH = mental health, EV = energy/vitality, P = bodily pain, GHP = general health perceptions, MCS = mental component summary. RLOC = Recovery locus of control, Post-anx = Post consultation anxiety, MISS = Medical interview satisfaction scale (DR = distress relief, CC = communication comfort, R = rapport, CI = compliance intent, Tot = total score]

Patients' age, education and assertiveness were not significantly associated with any of the post-consultation measures. There were no significant correlations between any of the pre-consultation measures and patients' perceived ability to communicate and the Physical Component Summary of the SF-36.

T-tests were used to explore whether there were any differences in satisfaction according to the dichotomous variables of gender and English as a first language. The results were non-significant for gender ($t_{(204)} = 0.073$, $p = 0.942$) but a significant result was found for English as a first language ($t_{(204)} = -2.535$, $p<0.05$), indicating that patients whose first language was English were more satisfied.

### 7.4.7. Correlations between the process measures and patient satisfaction

The process measures of total consultation time, total patient utterances, patient Disclosures, Questions and Reflections were correlated. Overall, there was little association between patients' verbal behaviour and the outcome measure of satisfaction. There was only one significant association found for patient Questions and satisfaction ($r = -0.184$, $p<0.05$).

### 7.4.8. Predictors of patient satisfaction

A hierarchical multiple regression was used to assess whether individual patient characteristics or the experimental groups predicted the greatest variance in a measure of the outcome of communication. Patient satisfaction was selected as the dependent measure for this analysis because it is one of the most frequently used outcome measures and is important because it is associated with many other outcome variables.

Variables were selected for entry into the regression if they correlated with the total score of the MISS at the $p<0.05$ level. The variables that were found to be significantly

correlated with patient satisfaction (MISS) were pre-consultation anxiety, five of the SF-36 subscales (Role Emotional, Social Functioning, Mental Health, Energy/Vitality and General Health Perceptions) the Mental Component Summary (SF-36). These five SF-36 subscales all correlated significantly with the Mental Component Summary score ($r = 0.8$, $p<0.01$; $r = 0.67$, $p<0.01$; $r = 0.85$, $p<0.01$; $r = 0.64$, $p<0.01$; $r = 0.37$, $p<0.01$) respectively. To avoid the problems of multicollinearity only the Mental Component Summary score was used, as these subscales are used to derive this score and it correlated the most highly with patient satisfaction. English as a first language was also entered into the equation as patients whose first language was English had significantly higher satisfaction scores ($t_{(204)} = -2.535$, $p< 0.05$). The collinearity statistics showed that the tolerance ranged from .755-.997, which was acceptable. As in the last regression, the dummy variables created to represent the experimental groups were also entered into the equation.

In the first block the individual patient characteristics of English as first language, pre-consultation anxiety and the MCS score of the SF-36 were entered into the equation using the standard (enter method), which enters this group of predictor variables simultaneously into the equation. In the second block the experimental group and the placebo control group were entered simultaneously, the control group was used as the reference group. As in the previous regression the variables were entered into the equation in this order to see whether the intervention explained variance over and above the individual differences.

The individual patient differences accounted for 8.2% of the variance in patient satisfaction on block one of the regression ($R^2 = .097$, $R^2_{adj} = 0.082$, $F_{(3,191)} = 6.815$, $p<0.001$). English as a first language and the MCS score of the SF-36 predictors ($\beta$

=.211, $p<0.01$; $\beta = .174$, $p<0.05$) (Table 7.43). This indicates that individuals whose first language is English and those with better psychological well-being are more satisfied with their consultations. The addition of the experimental groups failed to increase the amount of variance explained by the individual patient differences ($\Delta R^2 = .100$, $\Delta F_{(2,189)} = .376$, NS). Overall, adding the experimental groups reduced the variance in patient satisfaction to 7.6 % ($R^2_{adj} = 0.076$).

In summary, English as a first language and the MCS score of the SF-36 were significant predictors of patient satisfaction. Pre-consultation anxiety and the experimental groups were not significantly predictive of patient satisfaction.

**Table 7.43. Predictors of patient satisfaction**

| Predictor variable | Beta[§] (standardised) | t-value | Sig. | $R^2$ | Adj. $R^2$ |
|---|---|---|---|---|---|
| ***Block 1*** | | | | .097 | .082 |
| English as 1st language | .211 | 3.066 | .002 | | |
| Anxiety | -.094 | -1.270 | .206 | | |
| MCS (SF-36) | .174 | 2.346 | .020 | | |
| ***Block 2*** | | | | .100 | .076 |
| Experimental group | .061 | .766 | .445 | | |
| Placebo control group | .001 | .010 | .992 | | |

[§] = Beta value on entry in equation

## SECTION 5. The influence of the doctor on the consultation process, the outcomes of the consultation and the intervention

### 7.5.1. Introduction

This section reports on the exploration between the doctors in terms of the process variables; the VRM categories (Questions, Disclosures and Reflections) spoken by patients, the number of utterances made by both patients and doctors and the length of the consultations. This section also reports on the exploration of patient outcomes of satisfaction, anxiety, locus of control and patients perceived ability to communicate according to the consultant patients had been seen. Patient satisfaction was considered in relation to both doctor and patient gender. In addition, the relative contribution of the individual patient differences variables and the doctors on the patients' verbal contribution to the consultation and patient satisfaction were also examined.

### 7.5.2. Differences between the doctors in patient VRM modes

The highest means were for patient Disclosures, which ranged from 31-72. The means for Question were much smaller ranging 4.1-6.5. Patient Reflections was the smallest category ranging from a mean 1.7-2.2 (Table 7.44).

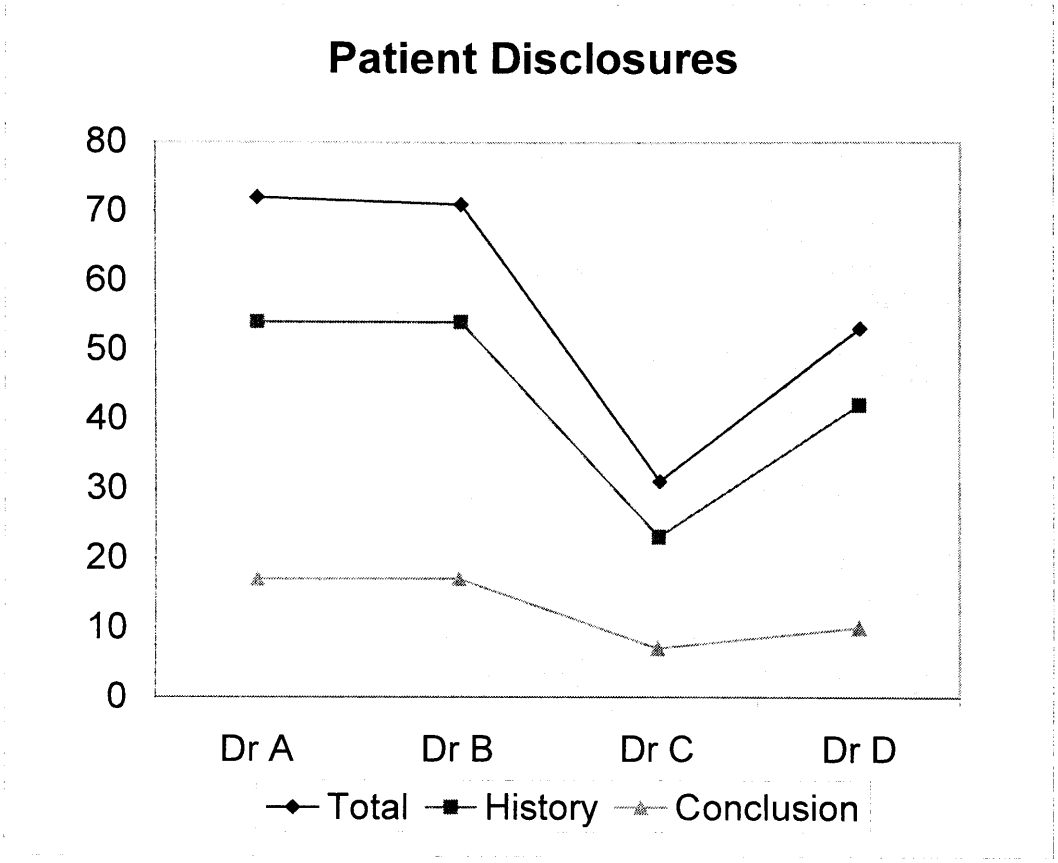
**Table 7.44. Means and SD's of patient VRM modes between doctors**

| | Dr A (n = 61) | Dr B (n=25) | Dr C (n = 38) | Dr D (n = 57) |
|---|---|---|---|---|
| Patient Questions | 4.7 (4) | 6.5 (5.2) | 4.1 (3.2) | 5.0 (4.1) |
| Patient Disclosures | 72 (33) | 71 (47) | 31 (20) | 53 (22) |
| Patient Reflections | 1.8 (2.1) | 2.2 (2.7) | 1.9 (2.1) | 1.7 (2) |

One-way ANOVA was used to examine whether there were difference between the doctors on patient Questions, Disclosures and Reflections. The results showed that there were no significant differences between the doctors for patient Questions and Reflections. However, there were significant differences found between the doctors in

patient Disclosures in the history, conclusion and whole interview. ($F_{(3,173)}$ = 15.840, $p$<0.001; $F_{(3,173)}$ = 13.195, $p$<0.001; $F_{(3,177)}$ = 20.519, $p$<0.001). Scheffe post hoc comparisons showed that Dr C's patients made significantly fewer Disclosures than patients of the other three doctors during the history-taking segment (Dr A, $p$<0.001; Dr B, $p$<0.001; Dr D, $p$<0.001). In the concluding segment there were no significant difference between Dr's A and B or between Dr's C and D, but there were significant differences between Dr A and Dr's C and D ($p$<0.001; $p$<0.001) and there was significant differences between Dr B and Dr's C and D ($p$<0.001; $p$<0.05). When the whole interview was considered the results were the same as they were in the history-taking segment where Dr C's patients made significantly fewer disclosures. Figure 7.1. shows the number of patient Disclosures in each segment of the consultation and that Dr C's patients made the fewest Disclosures.

**Figure 7.1. Patient disclosures between consultants**



Overall, there were significant main effects for doctor on these process measures. No significant interactions were found between doctor and experimental group.

### 7.5.3. Number of utterances by doctor

The mean number of utterances for each of the doctors and their patients was calculated for both the history and concluding segments separately and for the whole consultation. One-way ANOVA was used to identify whether there were significant differences in the amount of both doctor and patient talk between the doctors. The results demonstrated that in all segments of the consultation there were significant differences in the number of patient and doctor utterances (Table 7.45.).

**Table 7.45. Means (SD's) of number of patient and doctor utterances**

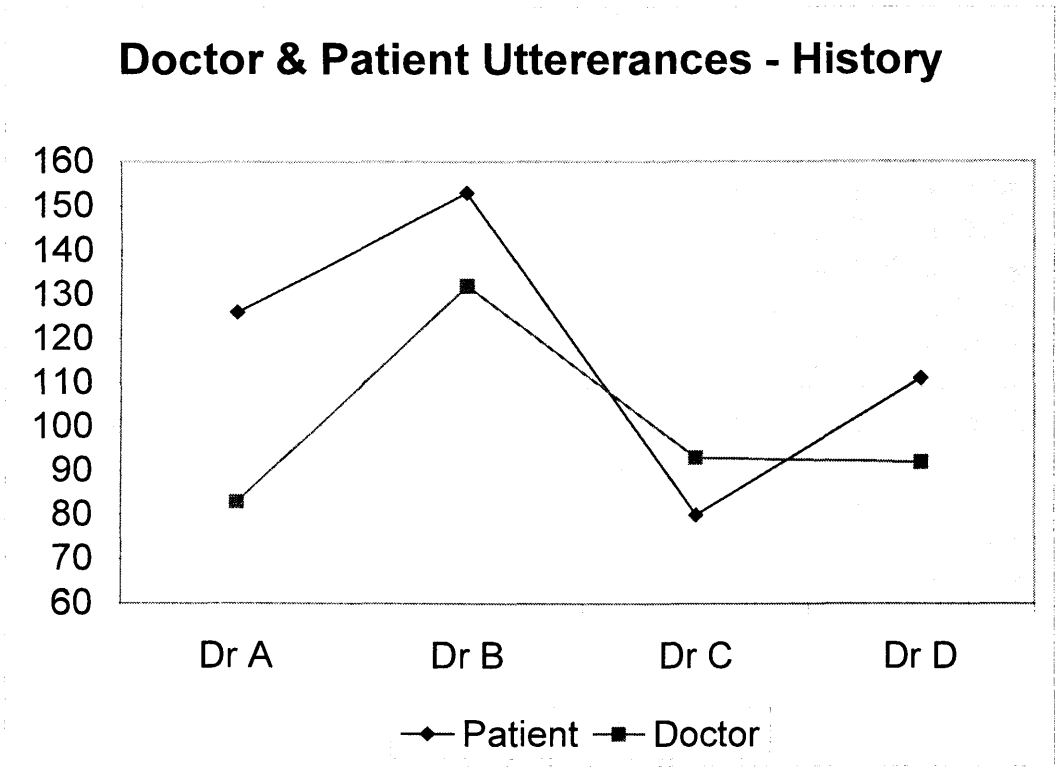
| Number of utterances | Dr A (n = 58) | Dr B (n = 25) | Dr C (n = 37) | Dr D (n = 57) | *df* | *F* | *p* |
|---|---|---|---|---|---|---|---|
| Patients H | 125.7 (49.4) | 153.4 (107.6) | 80.1 (35.9) | 111.2 (42.6) | 3,173 | 10.406 | 0.000 |
| Doctors H | 82.6 (29.5) | 132.2 (58.2) | 93.2 (24.1) | 91.8 (32.9) | 3,173 | 11.100 | 0.000 |
| Patients C | 51.9 (31.2) | 60.5 (54.8) | 31.9 (22.8) | 41.1 (32.5) | 3,173 | 4.920 | 0.003 |
| Doctors C | 58.3 (32) | 74.6 (48.4) | 57.2 (24.6) | 80.2 (47.2) | 3,173 | 3.891 | 0.011 |
| Patients T | 180.1 (65.6) | 213.9 (147.6) | 111.8 (50.4) | 152.3 (66.6) | 3,177 | 11.421 | 0.000 |
| Doctors T | 144.3 (53.7) | 206.9 (94.8) | 149.1 (39.4) | 172 (68.1) | 3,177 | 6.296 | 0.000 |

[**Abbreviations**: H = history, C = conclusion, T = total]

Scheffe post hoc comparisons indicate that in the history taking segment Dr A's patients uttered significantly more than Dr C's patients ($p<0.001$). Dr B's patients also uttered more than Dr C's ($p<0.001$). During this segment Dr B's patients talked the most followed by Dr A, and Dr D. Dr C's patients talked the least. Dr C's patients talked significantly less than patients of the other doctors. (Dr A $p<0.001$; Dr B $p<0.001$; Dr C $p<0.05$). No significant differences were found in the amount of talk between Dr A and Dr B's patients or Dr A and Dr D. There were significant differences in the number of doctor utterances during the history-taking segment where Dr B uttered significantly

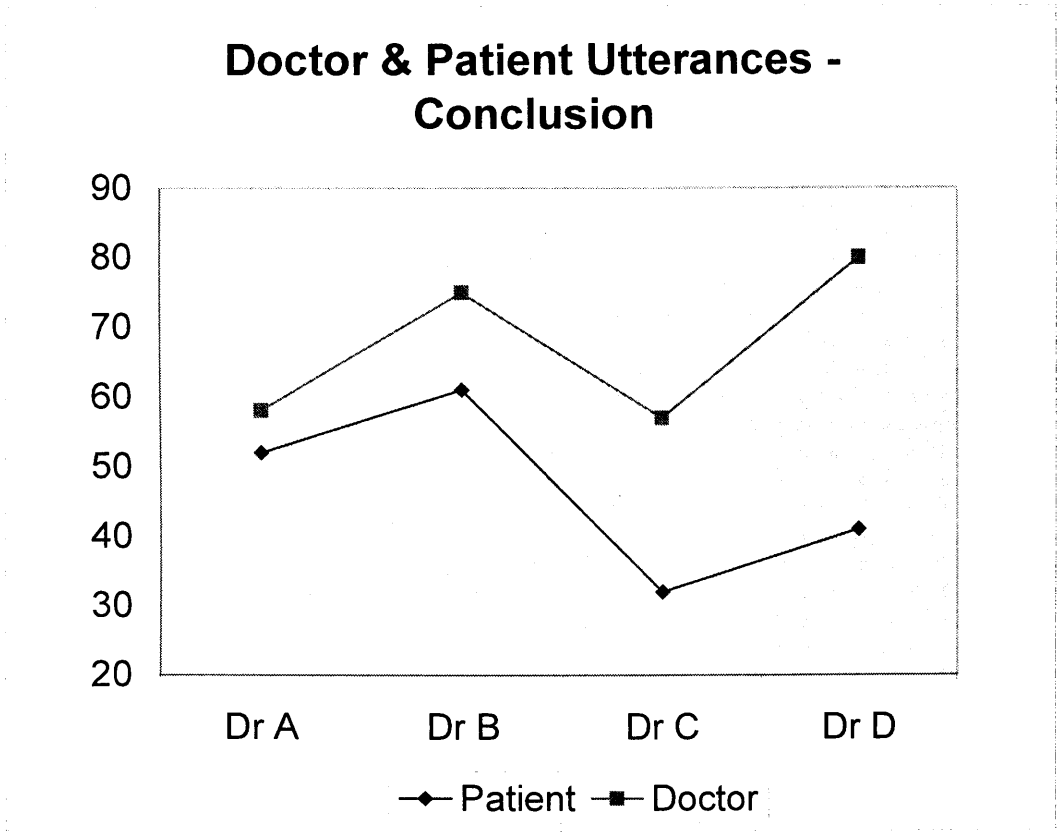
more than the other three doctors (Dr A $p<0.001$; Dr C $p<0.01$; Dr D $p<0.001$). Figure 7.2. displays the number of utterances made by patients and doctors in the history-taking segment and also demonstrates that patients talked more than their doctors, with the exception of Dr C, whose patients talked less.

**Figure 7.2. Doctor and patient utterances in the history-taking segment**



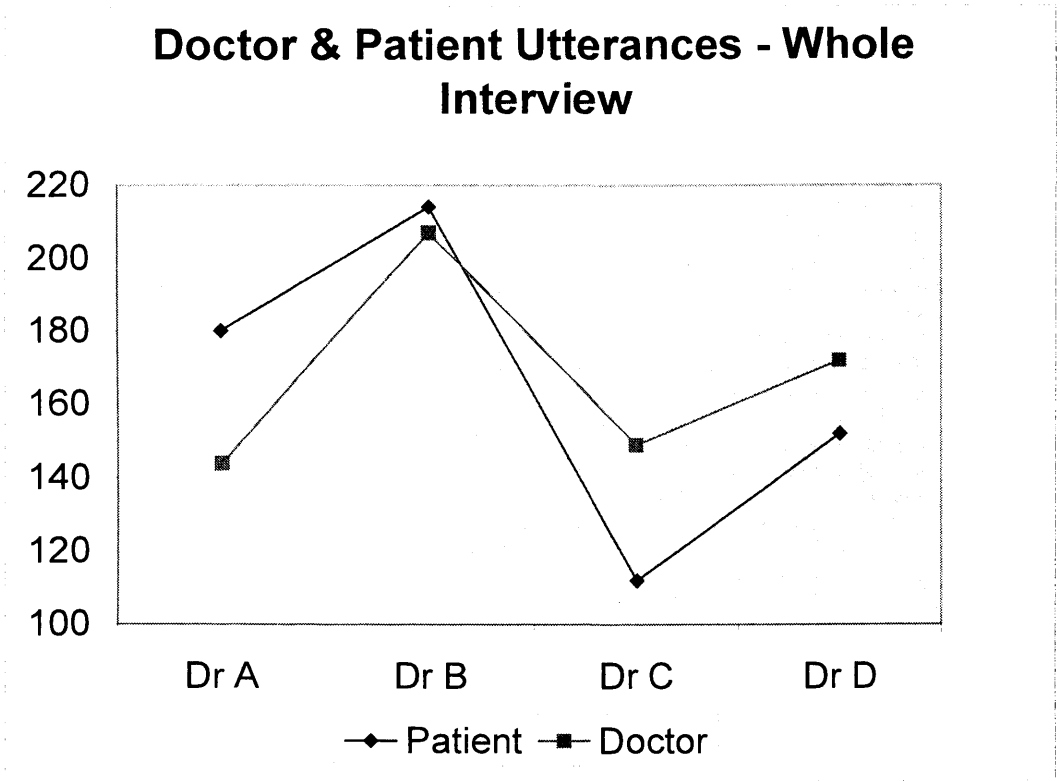

Significant differences were also found in the concluding segment for patient and doctor utterances. The post hoc comparisons showed that there was a significant difference in the number of patient utterances between Dr A and Dr C ($p<0.05$), Dr B and Dr C ($p<0.05$). No other significant differences in the number of patient utterances were found here. There was also a significant difference found for doctor utterances. Post hoc comparisons showed the difference was between Dr A and Dr D ($p<0.05$). Figure 7.3. shows the number of utterances for both patients and doctors and demonstrates that doctors talked more than their patients in the concluding segment, with only a small difference for Dr A and the largest difference being found for Dr D.

**Figure 7.3. Doctor and patient utterances in the concluding segment**




Significant differences were also found in the amount of patient utterances between the doctors when the history and concluding segments were considered together. Post hoc comparisons showed that Dr C's patients uttered significantly less than patients of the other three doctors (Dr A, $p<0.001$; Dr B $p<0.001$; Dr D $p<0.05$). Dr B's patients talked the most followed by Dr A, Dr D and Dr C. There were also significant differences in number of utterances between the doctors, with Dr B uttering more than Dr A ($p<0.001$) and Dr C ($p<0.05$), but no significant differences between Dr B and Dr D. Figure 7.4. shows the total number of doctor and patient utterances. When both parts of the consultation are considered together patients of Dr A and Dr B talk more than their doctors and patients of Dr C and Dr D talk less than their doctors.

**Figure 7.4. Doctor and patient utterances in the whole interview**




### 7.5.4. Doctor versus patient utterances

In the history-taking segment Dr A, Dr B and Dr D's patients all talked more than the doctors themselves, with the exception of Dr C who talked more than the patients. When the whole interview is considered Dr A and Dr B talk less than their patients but Dr C and Dr D talk more than their patients.

**Table 7.46. Mean differences between doctor and patient utterances by doctor**

| | Dr A (n = 61) | Dr B (n = 25) | Dr C (n = 38) | Dr D (n = 57) |
|---|---|---|---|---|
| History | 43 | 21 | 13 | 19 |
| Conclusion | 6 | 14 | 25 | 39 |
| Whole interview | 36 | 7 | 37 | 20 |

The ratio of doctor to patient utterances was close to 1:1 in all cases, but Dr A's patients uttered slightly more and Dr C's patients uttered slightly less.

**Table 7.47. Percentages and ratio of doctor to patient utterances**

| | Dr A (n = 61) | Dr B (n = 25) | Dr C (n = 38) | Dr D (n = 57) |
|---|---|---|---|---|
| % Patient utterances | 55.5% | 51% | 43% | 47 % |
| % Doctor utterances | 44.5% | 49 % | 57 % | 53% |
| Ratio doctor: patient utterances | 0.8:1 | 1:1 | 1.3:1 | 1:1 |

### 7.5.5. Consultation time by doctor

The length of the consultations was considered in both the history and concluding segments separately and the total consultation time for each of the four consultants. Overall, Dr B had the longest consultations lasting a mean of approximately 15 minutes, Dr A's consultations were approximately 12.5 minutes long followed by Dr D whose consultations were 10.5 minutes. The shortest consultations were conducted by Dr C, whose consultations were approximately 9.5 minutes (Table 7.48.). In the history taking segment Dr B spent the most time with patients, approximately 10 minutes, followed by Dr A and Dr C, with Dr D spending the shortest amount of time with patients approximately 6 minutes. The concluding segment was much shorter lasting approximately between 3.5 and 5 minutes with less variation between the doctors. One-way ANOVA was used to identify whether there were significant differences between the doctors in consultation length. Significant differences were identified in the history-taking segment and the total length of the consultations (Table 7.48.).

**Table 7.48. Means (SD's) and results of length of consultation by doctor**

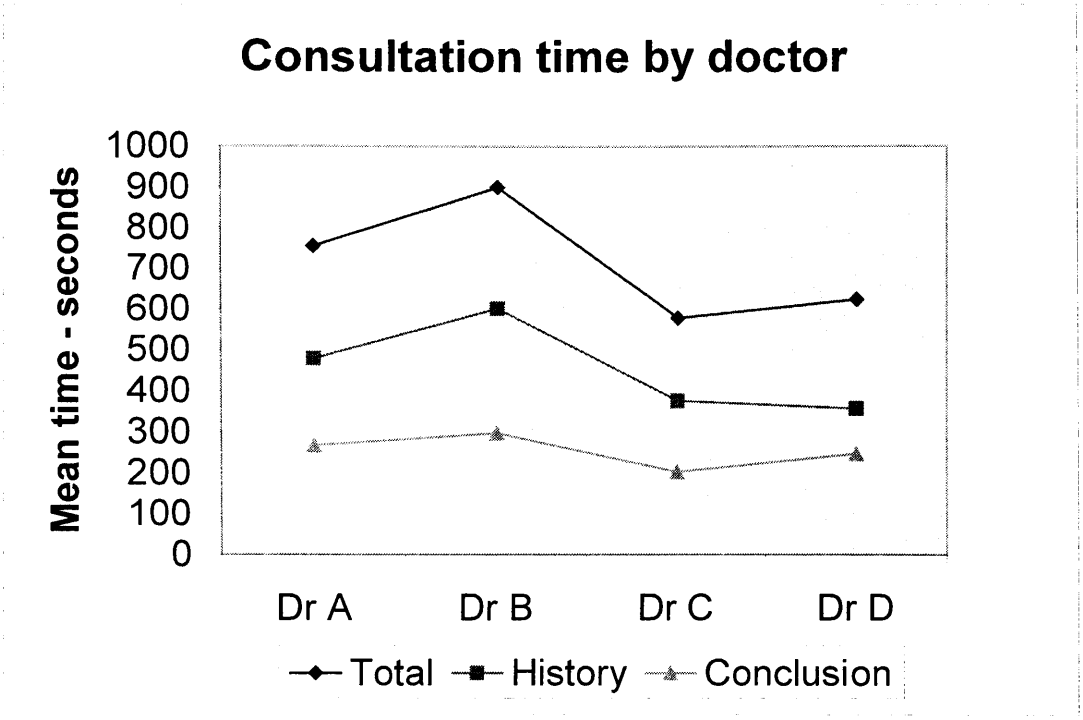
| Time in seconds | Dr A (n = 61) | Dr B (n = 25) | Dr C (n = 38) | Dr D (n = 57) | *df* | *F* | *p* |
|---|---|---|---|---|---|---|---|
| History | 479 (168) | 602 (315) | 376 (112) | 357 (108) | 3,171 | 13.943 | 0.000 |
| Conclusion | 268 (157) | 298 (214) | 203 (104) | 247 (154) | 3,171 | 1.946 | 0.124 |
| Total | 756 (282) | 900 (476) | 579 (171) | 624 (247) | 3,177 | 8.342 | 0.000 |

Scheffe post hoc comparisons showed that there were significant differences found between the doctors in their mean overall consultation length. Dr A and Dr B were not

significantly different, but Dr A had significantly longer consultations than Dr C ($p<0.05$) and Dr D ($p<0.05$). Dr B had significantly longer consultations than both Dr C and Dr D (Dr B and Dr C, $p<0.001$; Dr B and Dr D, $p<0.01$). The post hoc comparisons show that in the history-taking segment of the consultations Dr B had significantly longer consultations than Dr A ($p<0.05$), Dr C ($p<0.001$) and Dr D ($p<0.001$). There were no significant differences found between Dr A and Dr B or Dr C and Dr D in the history-taking segment. No significant differences were found in the concluding segment for length of time between the consultants.

Figure 7.5. shows the differences between the doctors in their consultation times and the differences in the duration of each segment of the interview, where overall the concluding segment was shorter than the history-taking segment.

**Figure 7.5. Consultation time by doctor**



### 7.5.6. Predictors of the number of patient utterances

In the previous section of the chapter (page 205) multiple regression analyses showed that an individual patient characteristic (Health Opinion Survey – information) was a significant predictor of the total number of patient utterances, whereas the experimental intervention was not significant. In this analysis the same individual patient characteristics are used, but the doctor variables replace the experimental groups.

A hierarchical multiple regression was used to assess whether individual patient characteristics or the doctors predicted the greatest variance in a measure of the process of communication. For this purpose the total number of patient utterances was chosen as the dependent measure because it includes the VRM categories of Questions, Disclosures and Reflections but also includes all other VRM categories and as such is a measure of the patients total verbal contribution to the consultation.

Variables were selected for entry into the regression if they correlated with the total number of patient utterances at the $p<0.05$ level. The variables that were found to be significantly correlated with the total number of patient utterances were pre-consultation anxiety, the information subscale of the Health Opinion Survey, two of the SF-36 subscales (Role Emotional and Mental Health) and the Mental Component Summary score. Both the Role Emotional and the Mental Health sub-scales of the SF-36 were highly correlated with Mental Component Summary score ($r = 0.8$, $p<0.01$; $r = 0.85$, $p<0.01$) respectively. To avoid the problems of multicollinearity only the Mental Component Summary score was used, as both these subscales are used to derive this score and it correlated the most highly with the total number of patient utterances. The collinearity statistics showed that the tolerance ranged from .585-998, which was acceptable. In addition, to assess the relative contribution of the doctors to the total

number of patient utterances, dummy variables were created to represent the doctors in order to permit their entry into the equation.

In the first block the individual patient characteristics of pre-consultation anxiety, the information subscale of the HOS and the MCS score of the SF-36 were entered into the equation using the standard (enter method), which enters this group of predictor variables simultaneously into the equation. In the second block the Doctor A, Doctor B and Doctor D were entered simultaneously, Doctor C was used as the reference group as this doctors patients had the fewest overall number of utterances. The variables were entered into the equation in this order to see whether the doctors explained variance over and above the individual differences.

The individual patient differences accounted for 7.1% of the variance in the total number of patient utterances on block one of the regression ($R^2$ = .090, $R^2_{adj}$ = 0.071, $F_{(3,140)}$ = 4.637, $p$<0.01), although only the information subscale of the HOS was a significant predictor ($\beta$ = .181, $p$<0.05) (Table 7.41). This indicates that individuals with a greater desire for information in the consultation are more verbally active. The addition of the doctors to the equation increased the variance explained by the individual patient differences to 20.1% ($\Delta$ $R^2$ = .144, $\Delta$ $F_{(3,137)}$ = 8.578, $p$<0.001), although only two of the doctors were significant predictors ($\beta$ = .285, $p$<0.01; $\beta$ = .439, $p$<0.001) Overall, adding the doctors increased the variance in the total number of patient utterances to 20.1% ($R^2_{adj}$ = 0.201) an increase of 13%. This suggests that doctors influence the patients' verbal contribution to the consultation over and above individual patient differences.

In summary, the regression analyses indicated that information subscale of the HOS, Two of the doctors were significant predictors of the total number of patient utterances. Pre-consultation anxiety, the MCS score of the SF-36 and the remaining doctors variable were not predictive of the total number of patient utterances.

**Table 7.49. Predictors of the number of patient utterances**

| Predictor variable | Beta[§] (standardised) | t-value | Sig. | $R^2$ | Adj. $R^2$ |
|---|---|---|---|---|---|
| ***Block 1*** | | | | .090 | .071 |
| Anxiety | .120 | 1.372 | .172 | | |
| HOS - information | .181 | 2.241 | .027 | | |
| MCS (SF-36) | -.160 | -1.822 | .071 | | |
| ***Block 2*** | | | | .234 | .201 |
| Doctor A | .285 | 2.918 | .004 | | |
| Doctor B | .439 | 4.908 | .000 | | |
| Doctor D | .171 | 1.753 | .082 | | |

[§] = Beta value on entry in equation

### 7.5.7. Analysis of post-consultation measures by consultant

This section reports on the findings of the between consultant analysis on the outcome measures of patient satisfaction, anxiety, recovery locus of control and patients' perceived ability to communicate. ANOVA was used to determine any differences between the consultants on the post-consultation measures, the Medical Interview Satisfaction Scale, anxiety and Recovery Locus of Control and patients' perceived ability to communicate.

### 7.5.8. Between doctor analysis of patient satisfaction

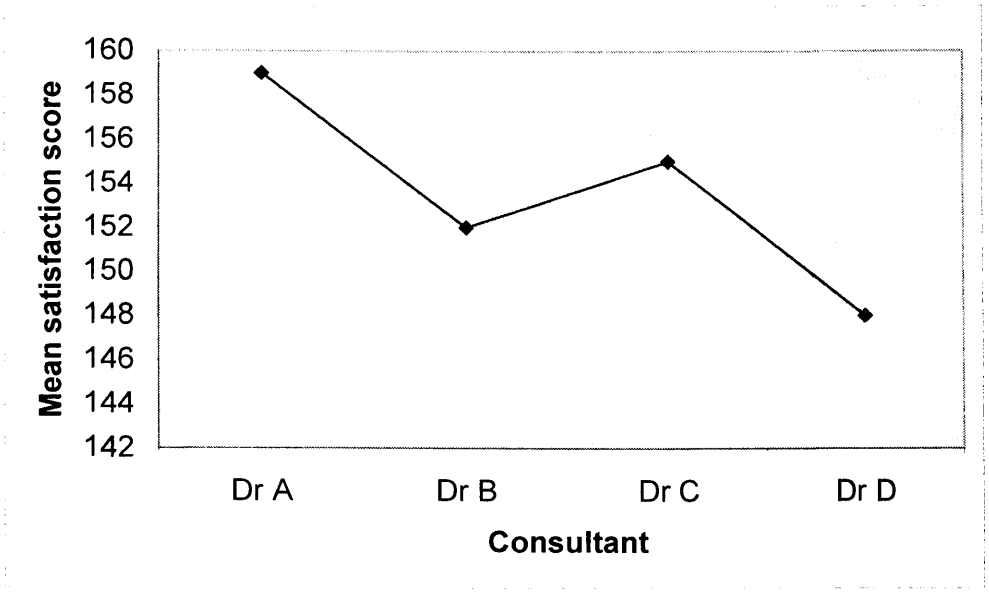
One-way ANOVA was used to determine whether there were differences between the consultants on patient satisfaction. Significant differences were found between the consultants for one of the subscales and the total score of the Medical Interview Satisfaction Scale (MISS) (Table 7.50.). The Rapport subscale was significant ($F_{(3,201)} = 5.767, p < 0.01$) and so was the total score of the MISS ($F_{(3,201)} = 3.021, p < 0.05$). Scheffe

post hoc comparisons showed that there were significant differences between Dr's A and D on the rapport subscale ($p<0.001$) and the total scores on the MISS. ($p<0.05$).

**Table 7.50. Means (SD's) and results of patient satisfaction by doctor**

| | Dr A (n = 75) | Dr B (n = 36) | Dr C (n = 39) | Dr D (n = 56) | *df* | *F* | *p* |
|---|---|---|---|---|---|---|---|
| MISS-DR | 59 (10.1) | 55.4 (8.8) | 56.4 (10.2) | 54.5 (8.7) | 3,202 | 2.516 | 0.059 |
| MISS-CC | 22.4 (4.2) | 21.8 (3.8) | 22.5 (3.6) | 20.8 (3.3) | 3,201 | 2.410 | 0.068 |
| MISS-R | 56.4 (8.3) | 54 (7.5) | 54.1 (8.7) | 50.6 (6.8) | 3,201 | 5.767 | 0.001 |
| MISS-CI | 21.4 (4.3) | 21.1 (3.9) | 21.9 (3.3) | 21.2 (2.9) | 3,201 | 0.360 | 0.782 |
| MISS-tot | 159 (24.6) | 152.3 (20.6) | 154.9 (22.6) | 147.5 (18) | 3,201 | 3.021 | 0.031 |

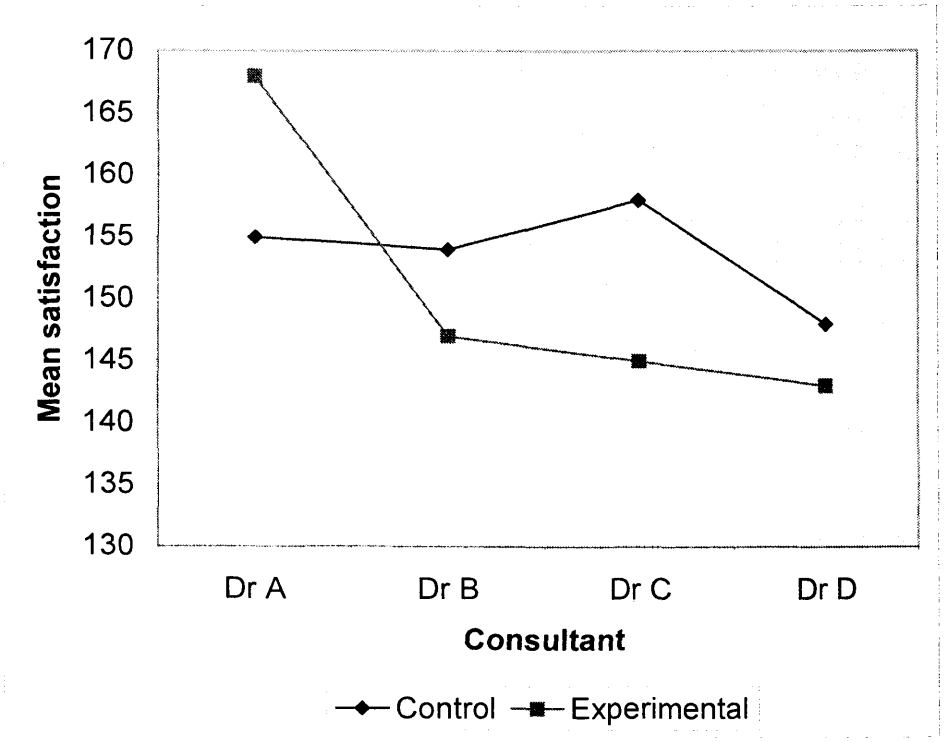
**Figure 7.6. Patient satisfaction by consultant**




As there was a significant difference between the doctors further investigation was warranted. A two-way ANOVA was performed to ascertain whether there was an interaction between experimental group and consultant on patient satisfaction. As there were no significant differences between the control groups for patient satisfaction, in this analysis they were combined. The main effect for consultant was significant ($F_{(3,197)} = 4.612$, $p<0.01$). The main effect of group was not significant ($F_{(3,197)} = 0.520$, $p = 0.472$). There was a significant interaction found between consultant and group ($F_{(3,197)}$

= 3.019, $p<0.05$). This interaction effect showed that for Dr A the experimental group were more satisfied than the control group. Patient satisfaction was higher in the control group than the experimental group for the other three consultants (Figure 7.7.).

**Figure 7.7. Interaction between consultant and experimental group on patient satisfaction**




### 7.5.9. Between doctor analysis of state anxiety

To explore the role of the consultant on state anxiety a repeated measures ANOVA (mixed-design) was used. The within subject factor was state anxiety measured pre- and post-consultation and the between subject-factor was consultant seen. The main effect of anxiety was not significant ($F_{(1,188)} = 0.008$, $p = 0.930$). The doctor by time (pre- and post-consultation) interaction was significant ($F_{(3,188)} = 3.197$, $p<0.05$). The main effect of doctor was also non-significant ($F_{(3,188)} = 0.690$, $p = 0.559$). Patients of doctors' A

and D showed a reduction in state anxiety scores post-consultation and conversely the post-consultation anxiety scores of doctors' B and C were higher than the pre-consultation scores (Figure 7.8.). Means and SD's are displayed in Table 7.51.

**Figure 7.8. Interaction between pre- and post-consultation anxiety and consultant**

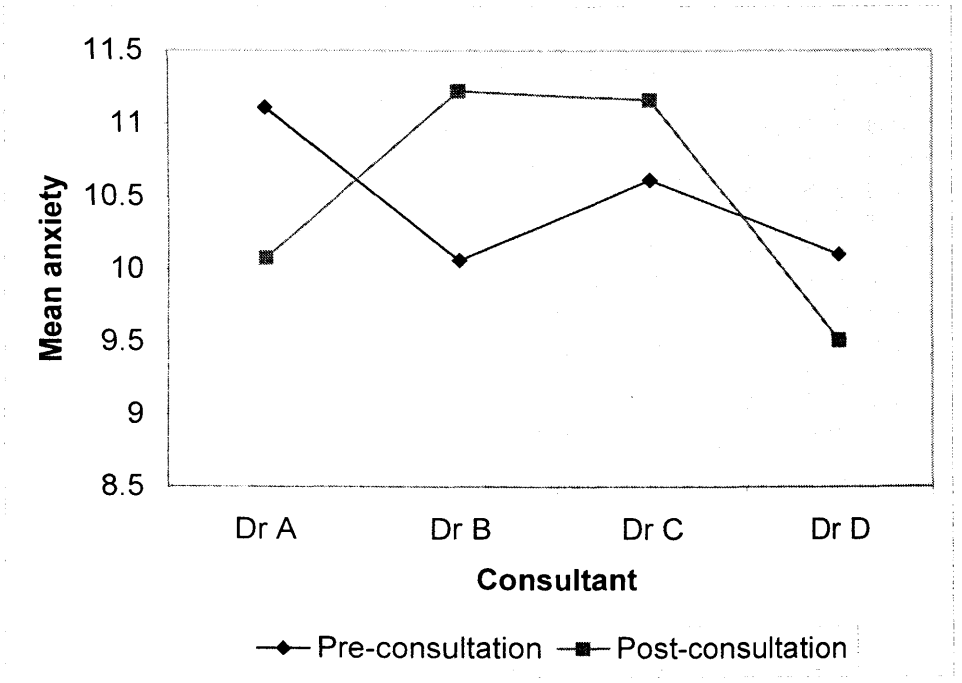



**Table 7.50. Means (SD's) of patient anxiety by doctor**

| | Dr A (n =72) | Dr B (n=32) | Dr C (n = 38) | Dr D (n = 50) |
|---|---|---|---|---|
| Pre-consultation anxiety | 11.11 (4.552) | 10.06 (3.272) | 10.61 (4.271) | 10.20 (3.891) |
| Post consultation anxiety | 10.08 (3.848) | 11.22 (3.405) | 11.16 (3.908) | 9.62 (3.319) |

### 7.5.10. Between doctor analysis of Recovery Locus of Control

A two-way ANOVA was performed to ascertain whether there was an interaction between experimental group and consultant seen on Recovery Locus of Control. The main effect for consultant was not significant ($F_{(3,190)} = 0.178$, $p = 0.911$), The main effect for group was not significant ($F_{(1,190)} = 0.116$, $p = 0.734$). The group by doctor interaction was not significant ($F_{(3,190)} = 1.007$, $p = 0.391$).

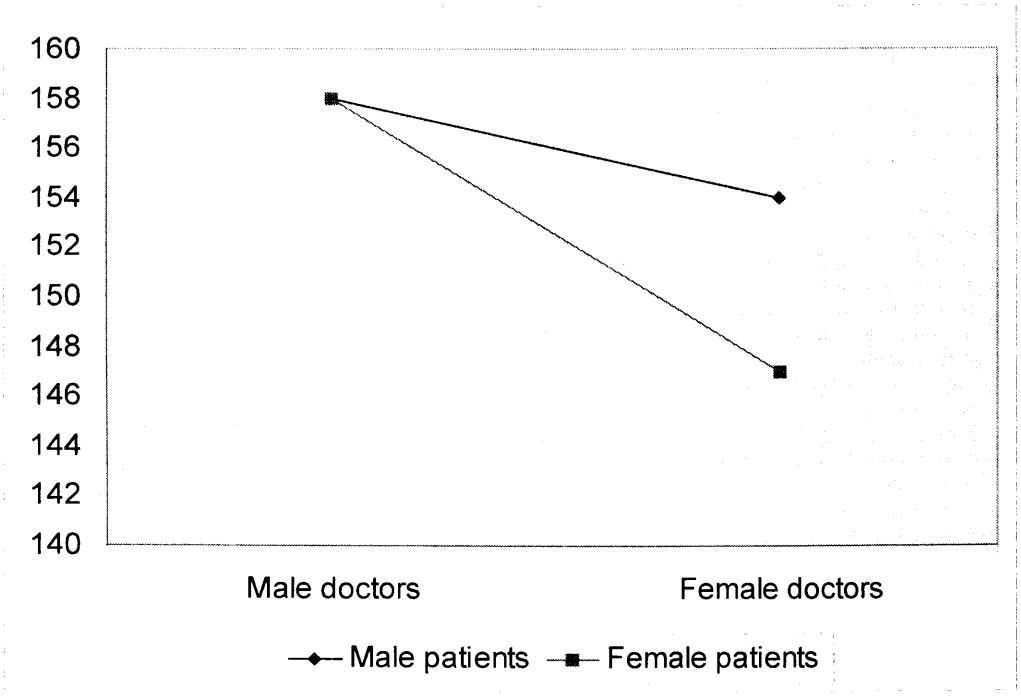
### 7.5.11. Between doctor analysis of patients' perceived ability to communicate

A two-way ANOVA was performed to ascertain whether there was an interaction between experimental group and consultant seen on patients' perceived ability to communicate. The main effect for consultant was not significant ($F_{(3,194)} = 1.651$, $p = 0.179$), The main effect for group was not significant ($F_{(1,194)} = 0.013$, $p = 0.911$). The group by doctor interaction was not significant ($F_{(3,194)} = 2.212$, $p = 0.088$).

### 7.5.12. Doctor and patient gender and satisfaction

A two-way ANOVA was performed to ascertain whether there was an interaction between gender of doctors and patients and patient satisfaction. The main effect of doctor gender was significant ($F_{(1,201)} = 7.637$, $p<0.01$), The main effect of patient gender was not significant ($F_{(1,201)} = 0.413$, $p = 0.521$). The doctor gender and patient gender interaction was not significant ($F_{(1,201)} = 0.372$, $p = 0.543$). Overall, patients of either gender were more satisfied with the male doctors than the female doctors. Although not significant both male and female patients were equally satisfied with the male doctors and male patients were more satisfied with female doctors than the female patients were.

**Figure 7.9. Gender of doctors and patients and patient satisfaction**




Statistically, the doctor is a random rather than a fixed factor. In these two-way ANOVA the doctors have been treated as a fixed factor because if they were treated as a random factor, the effect would depend on the number of doctors rather than the number of patients seen by each doctor. This would result in the analysis being much less powerful. A factor is fixed when the levels under study are the only levels of interest as was the case with the experimental groups. In this instance when considering the doctors, if there was no intention to generalise results concerning the four doctors from one particular hospital then the doctors would be fixed factors. A factor is random when the levels under study are a random sample from a larger population (Dallal, 2001).

### 7.5.13. Predictors of patient satisfaction

In the previous section of the chapter (page 209) multiple regression analyses showed that individual patient characteristics were significant predictors of patient satisfaction, whereas the experimental intervention was not significant. In this analysis the role of the

same patient characteristics and the doctors is investigated. A hierarchical multiple regression was used to assess whether individual patient characteristics or the doctors predicted the greatest variance in a measure of the outcome of communication. Patient satisfaction was selected as the dependent measure for this analysis because it is one of the most important and frequently used outcome measure and is associated with many other outcome variables.

Variables were selected for entry into the regression if they correlated with the total score of the MISS at the $p<0.05$ level. The variables that were found to be significantly correlated with patient satisfaction (MISS) were pre-consultation anxiety, five of the SF-36 subscales (Role Emotional, Social Functioning, Mental Health, Energy/Vitality and General Health Perceptions) the Mental Component Summary (SF-36). These five SF-36 subscales all correlated significantly with the Mental Component Summary score ($r = 0.8$, $p<0.01$; $r = 0.67$, $p<0.01$; $r = 0.85$, $p<0.01$; $r = 0.64$, $p<0.01$; $r = 0.37$, $p<0.01$) respectively. To avoid the problems of multicollinearity only the Mental Component Summary score was used, as these subscales are used to derive this score and it correlated the most highly with patient satisfaction. English as a first language was also entered into the equation as patients whose first language was English were more satisfied ($t_{(204)} = -2.535$, $p< 0.05$). The collinearity statistics showed that the tolerance ranged from .660-.997, which was acceptable. As in the last regression, the dummy variables created to represent the doctors were also entered into the equation.

In the first block the individual patient characteristics of English as first language, pre-consultation anxiety and the MCS score of the SF-36 were entered into the equation using the standard (enter method), which enters this group of predictor variables simultaneously into the equation. In the second block Doctor A, Doctor B and Doctor C were entered simultaneously, Doctor D was the reference doctor because this doctors

patients had the lowest satisfaction scores. Again as in the previous regression, the variables were entered into the equation in this order to see whether the doctors explained variance over and above the individual differences.

The individual patient differences accounted for 8.2% of the variance in patient satisfaction in block one of the regression ($R^2$ = .097, $R^2_{adj}$ = 0.082, $F_{(3,191)}$ = 6.815, $p$<0.001). English as a first language and the MCS score of the SF-36 were significant predictors ($\beta$ = .211, $p$<0.01; $\beta$ = .174, $p$<0.05) (Table 7.41). This indicates that individuals whose first language is English and those with better psychological well-being are more satisfied with their consultations. The addition of the doctors to the equation increased the variance explained by the individual patient differences to 12.3 % ($\Delta R^2$ = .053, $\Delta F_{(3,188)}$ = 3.916, $p$<0.05), although only two of the doctors were significant predictors ($\beta$ = .271, $p$<0.01; $\beta$ = .169, $p$<0.05) Overall, adding the doctors increased the variance in the total number of patient utterances to 12.3 % ($R^2_{adj}$ = 0.123) an increase of 4.1%. This suggests that doctors influence the patients' satisfaction with the consultation over and above individual patient differences. In summary, English as a first language, the MCS score of the SF-36 and two of the doctors were significant predictors of patient satisfaction. Pre-consultation anxiety and the remaining doctor were not predictive of patient satisfaction.

**Table 7.52. Predictors of patient satisfaction**

| Predictor variable | Beta[§] (standardised) | t-value | Sig. | $R^2$ | Adj. $R^2$ |
|---|---|---|---|---|---|
| ***Block 1*** | | | | .097 | .082 |
| English as 1st language | .211 | 3.066 | .002 | | |
| Anxiety | -.094 | -1.270 | .206 | | |
| MCS (SF-36) | .174 | 2.346 | .020 | | |
| ***Block 2*** | | | | .150 | .123 |
| Doctor A | .271 | 3.275 | .001 | | |
| Doctor B | .073 | .932 | .353 | | |
| Doctor C | .169 | 2.123 | .035 | | |

[§] = Beta value on entry in equation

## SECTION 6. Experimental video evaluation

### 7.6.1. Patients' evaluation of the experimental video

This section presents the evaluation of the experimental video and was based on a sample of 65 patients. Patients in the experimental group were asked to rate the four key aspects of the video. Each of these items were rated on a five point scale ranging from strongly disagree, disagree, neither agree or disagree, agree, and strongly agree, with strongly disagree scoring one and strongly agree scoring 5. Therefore, the minimum score for the entire measure was 4 and the maximum score was 20.

**Table 7.53. Means (SD's) of video evaluation questionnaire**

| n = 65 | Range | Mean (SD) |
|---|---|---|
| **Item 1** | 1-5 | 3.4 (0.9) |
| **Item 2** | 1-5 | 3.7 (0.8) |
| **Item 3** | 1-5 | 3.6 (0.8) |
| **Item 4** | 1-5 | 3.6 (0.8) |
| **Total** | 4-20 | 14.3 (2.9) |

The means for each of the four items ranged from 3.4-3.71 and the SD's were all less than 1. The mean total score was 14.32 and the SD 2.87. The video was rated the most highly for item two which related question asking, the next highest rating was for reminding, following this was expression of concerns and the video was rated the least helpful for understanding what the doctor had said. The frequencies and percentage of patients' responses to each item are reported in Table 7.54.

**Table 7.54. Frequencies and percentages of patients' responses to video evaluation questionnaire (Frequencies in parentheses)**

| n = 65 | Strongly disagree | Disagree | Neither agree or disagree | Agree | Strongly agree |
|---|---|---|---|---|---|
| **Item 1** | (2) 3.1 | (8) 12.3 | (22) 33.8 | (28) 43.1 | (5) 7.7 |
| **Item 2** | (1) 1.5 | (3) 4.6 | (16) 24.6 | (39) 60 | (6) 9.2 |
| **Item 3** | (1) 1.5 | (2) 3.1 | (24) 36.9 | (31) 47.7 | (7) 10.8 |
| **Item 4** | (1) 1.5 | (5) 7.7 | (20) 30.8 | (33) 50.8 | (6) 9.2 |

To simplify the video evaluation the categories of 'strongly disagree' and 'disagree' were considered together as were 'agree' and 'strongly agree,' resulting in three possible categories (Table 7.55.). The first item (I felt the video helped me understand what the doctor said) showed that about half the patients agreed with this statement and about 15% disagreed. The second item (I felt that the video helped me ask the questions that were important to me) demonstrated that almost 70% of patients agreed with this and only 6% disagreed. The third item (I felt the video helped me express my concerns and feelings) showed that nearly 60% of patients agreed and slightly less than 5% disagreed. The last item (I felt the video helped me to remind myself of what the doctor said) showed 60% agreement and 9% disagreement. Overall, between 50-70% of respondents agreed or strongly agreed with the statements and between 4.6-9.2 % disagreed, with between 24.6- 36.9% remaining undecided.

**Table 7.55. Percentage of patients agreeing or disagreeing with questionnaire items**

| | Disagree | Neither agree or disagree | Agree |
|---|---|---|---|
| **Item 1** | 15.4 | 33.8 | 50.8 |
| **Item 2** | 6.1 | 24.6 | 69.2 |
| **Item 3** | 4.6 | 36.9 | 58.5 |
| **Item 4** | 9.2 | 30.8 | 60 |

### 7.6.2. Individual patient characteristics and the experimental video evaluation

Two of the demographic variables, the psychological measures and perceived health status were correlated with the overall score for video evaluation, using Pearson correlations (2-tailed). The results showed that there was a significant positive correlation between age and the video evaluation ($r = 0.447$, $p<0.01$). There was also a significant positive correlation between Powerful Others Health Locus of Control ($r = 0.446$, $p<0.01$). Significant negative correlations were found for the information, behavioural and total score of the Health Opinion Survey and the video evaluation ($r = -$

0.308, $p<0.05$; $r$ = -0.407, $p<0.01$; r = -0.432, $p<0.01$) respectively. There was also a significant negative correlation between Role Limitation Physical subscale of the SF-36 and the video evaluation ($r$ = -0.282, $p<0.05$). No significant correlations were found between overall scores on the video evaluation scale and the sub-scales and overall scores on the MISS.

### 7.6.3. Summary of the main findings of the study

The main results from this study demonstrated that the video intervention did not result in significant increases in patient participation in the process of communication or in patient outcomes. Patients who reported that the outcome of the consultation was what they expected it to be were significantly more satisfied than patients whose expectations were not met. In the regression analysis individual patient differences only accounted for 7.1% of the variance in patient participation in the consultation and 8.2% of the variance in patient satisfaction. The addition of the experimental intervention did not contribute significantly to patient participation or satisfaction.

Significant differences were found in patient participation according to which doctor the patient had seen. Regression analysis revealed that the individual patient differences and the doctor seen predicted 20.1% of the variance in patients' verbal contribution to the consultation. The addition of the doctors to the equation contributed an extra 13% of the variance over the individual patient differences. A significant interaction was found between the doctor seen and time (pre- and post-consultation) on state anxiety as well as significant differences in patient satisfaction between the doctors. A significant interaction was found between experimental group and doctor seen in that for one doctor the experimental group patients were more satisfied than controls. This pattern was reversed for the other doctors where experimental group patients were less

satisfied. The regression analysis showed that individual patient differences and the doctors accounted for 12.3 % of the variance in patient satisfaction. The addition of the doctors increased the variance in patient satisfaction by 4.1%.

# CHAPTER 8

# DISCUSSION

## 8.1. Introduction

The principal aims of this study were to develop a video intervention and to determine whether this intervention could be successful in increasing patient participation in communication with doctors in an outpatient clinic. In order to establish the efficacy of the intervention, the process of communication was examined using the Verbal Response Modes system (Stiles, 1992) and patient outcomes were assessed using self-report questionnaires. This chapter discusses the efficacy of the video intervention, the role of individual patient characteristics and the impact of the doctor on the intervention. Additionally, the chapter covers the patients' evaluation of the experimental video, appraisal of the current study and directions for future research.

## 8.2. The impact of the intervention on the process of communication

It was hypothesised that patients in the experimental group would demonstrate greater participation in the consultation by asking more questions than patients in the placebo control or control groups. This hypothesis was rejected as no significant differences were found between the groups. While not significant, the experimental group patients asked slightly more questions (mean 5.2) than patients in the placebo control group (mean 4.7) and control group (mean 4.9). This finding is consistent with other intervention studies where non-significant increases in question-asking were noted (Greenfield et al., 1985; Tabak, 1988; Thompson et al., 1990; McCann & Weinman, 1996). These studies were all face-to-face and written interventions. Of the three studies that did use a video intervention in order to increase patient participation in consultations (Wallston et al., 1979; Anderson et al., 1987; Lewis et al., 1991) none considered question-asking, leaving no basis for comparison with this study. Overall,

the average number of questions asked per consultation was 4.9, which represented 3% of the mean number of patient utterances per consultation. The findings from this study concur with findings from other studies, where it has been reported that question-asking represents very little of the patient's verbal contribution to the consultation (Roter, 1977; Butow et al., 1994; Ford et al., 1995). A more recent intervention study using a question-asking prompt sheet, found that their patients asked a mean of nine questions per consultation (Brown, Butow, Dunn & Tattershall, 2001). However, in this study doctors either proactively addressed or passively responded to the question prompt sheet, perhaps explaining the overall higher rate of patient question-asking. In the present study, the doctors were unaware of the study purpose or the nature of the intervention, so would not have been expecting an increased rate of question-asking from patients.

Question-asking is considered an essential and observable feature of patient participation, because utterances in interrogative form are intended to seek and clarify information (Street, 1991; Street et al., 1995). Intervening to increase question-asking appears to be limited in its success and a number of suggestions have been posited to explain this lack of question-asking. For example, some questions may be answered by information spontaneously given by the doctor during the consultation (Roter, 1984). In another intervention study, the author observed that the doctor made efforts to elicit problems and concerns irrespective of whether or not the patients asked questions and concluded that in their sample patients appeared to have more opportunity to ask questions than the literature indicates, leaving little room for improvement by training patients (Tabak, 1988). Question-asking may be also be actively discouraged by the doctor's behaviour or the patient's unwillingness to 'worry' the doctor with too many questions (Roter, 1984). It has also been observed that patients tend to receive new

information or instructions passively, without asking questions or making comments (Robinson & Whitfield, 1985).

In this study, the small number of patient questions may be due to reasons already suggested by other authors, but in the context of this study there are other possibilities. The patients in this study were new to the cardiology department. The most frequent outcomes from these consultations were that either the patients were given the 'all clear' and discharged from the clinic, or they were referred for further investigations and therefore did not receive a diagnosis. The former group of patients may not have asked many questions as they had been told there was no identifiable problem and there was no need for further investigation. The latter group of patients could have felt that it would be better to wait until they had their test results, so that the doctor would then know what the problem was before asking questions. There exists the possibility that patients simply may not have wanted any further information other than that provided. Another possibility is that the nature of the consultations simply does not allow the patient time to think of questions they want to ask, because of the speed or complexity of what they have been told, even if they have mentally prepared questions pre-consultation. Alternatively, the doctors' explanation of the patients' health problem may have been sufficiently comprehensive that the patients felt they did not need to ask any more questions or that the patients fully understood the situation and therefore had no need to ask any questions. However, the patients in this study were not explicitly asked whether they had any residual questions post-appointment.

It was also predicted that patients in the experimental group would produce more 'Disclosures'. Patients inevitably will disclose a certain amount of information only known to themselves in response to the doctors' questions, for example 'I feel the pain

here'. However, the experimental video recommended that patients express any concerns and worries they may have. Such expressions will also be Disclosures, an example of which is 'I am worried my condition could affect my work'. Hence it was hypothesised that there would be an increased number of Disclosures in the experimental group consultations. Over the whole sample the mean number of Disclosures was 57 representing 35% of the total number of patient utterances. There was a non-significant increase in Disclosures in the expected direction with experimental group patients producing a mean of 61 compared to 58 and 52 respectively for the control groups.

Patients' reluctance to raise psychosocial issues has been reported in general practice (Robinson & Roter, 1999). Some of the most common unvoiced agendas included worries about the possible diagnosis and what the future might hold, and the patients' ideas about what is wrong (Barry, Bradley, Britten, Stevenson & Barber, 2000). The odds of psychosocial problem disclosure have been shown to be greater with doctor-patient familiarity (Robinson & Roter, 1999).

As this was the patient's first consultation, it may be that until the patient receives a diagnosis they may not be aware of exactly what their worries and concerns are and therefore may be unable to verbalise them. Their initial concerns maybe met simply just by having the appointment and the expression of concerns may be more relevant at subsequent appointments. In this study, the consultant was unknown to them and it may take some time before sufficient rapport and trust has built up between them for the patients to be able to freely disclose concerns and worries. Patients may still feel it is inappropriate the 'burden' the doctor with concerns and worries that they feel might not be directly relevant to the consultation. It is also possible that patients did not express

concerns and worries because the doctor adequately addressed them before the need arose to voice them, but this is speculation and beyond the scope of the VRM system. Finding a way to distinguish between the different types of disclosures is topic for future research.

A third category of verbal behaviour that was expected to occur more frequently in the experimental group was Reflections. According to the VRM taxonomy Reflections are repetitions or paraphrasing what the other has said, and as such are analogous to summarising or clarifying behaviours. Reflections made up just 0.55% of the total utterances with a mean of 1.8. As with the two previous speech act categories the results did not support this hypothesis as there were no significant differences found between the groups. There was a non-significant increase in Reflections in the expected direction, but these differences were small, with experimental group patients producing a mean of 2 compared to 1.9 and 1.6 respectively for the control groups. This finding is consistent with findings from a recent study (Cegala et al., 2000), which also noted a non-significant increase in summarising behaviours. It is a possibility that the nature of the consultations meant that patients felt it was unnecessary to summarise or clarify what had been said as in the majority of cases neither treatments, medications, nor other health recommendations were prescribed. The majority of patients had no identifiable cardiac condition and for those that did have a problem, further diagnostic tests were proposed. Another explanation for the lack of significant increases in all three categories of verbal behaviours in the experimental group is that perhaps the video was not able overcome patients' inhibitions sufficiently to allow them to make more Questions, Disclosures and Reflections. The problem would be compounded if the doctor did not explicitly and actively encourage such verbal behaviours.

Patient participation in the encounter was further quantified by counting the number of utterances made by patients and doctors and by timing the length of the consultations. It was anticipated that patients in the experimental group would take a more verbally active role in the consultations by talking more. Overall, no significant differences were found in the number of patient utterances either in the history-taking segment, the concluding segment, or over the entire consultation. However, the experimental group patients made a greater number of utterances in the concluding segment of the consultation and over the whole consultation, where the experimental group mean was 167 compared to the placebo control groups mean 163 and the control group 155, suggesting marginally greater overall participation in the experimental group.

In this study the balance of doctor to patient utterance was virtually equal with doctors contributing 50.2% of all utterances, in comparison to an earlier study that showed doctors were found to contribute 57% of all utterances (Roter, 1984), suggesting that in this study either the patients were generally more assertive or that the consultants permitted greater participation. Alternatively, as patients were new to the clinic there may have been a much greater emphasis on the history-taking portion of the interview, whereas in the Roter study the patients had previously-diagnosed chronic conditions and were returning for follow-up appointments.

It was also thought that the experimental group patients would have longer consultations. Again, this hypothesis was not substantiated as no significant differences were found between the groups in terms of the length of the consultations either in the history taking segment, the conclusion or over the entire consultation. Once more, there was a non-significant trend towards longer interviews in the experimental group with the overall mean time for the experimental group being just over twelve minutes, the

placebo control group nearly twelve minutes and in the control group eleven minutes. The number of patient utterances was directly related to the length of the consultations ($r = 0.9$, $p< 0.01$), indicating that longer consultations were due to a greater amount of discussion taking place, rather than, for example, the same amount of discussion conducted more slowly or with a longer gap between utterances. Therefore, both total number of utterances and length of consultation can be considered as a direct measure of overall patient participation.

Five of the seven intervention studies reviewed that reported on the length of the consultation, found that the interventions did not increase the duration of the consultation (Roter, 1977; Greenfield et al., 1985; Thompson et al., 1990; McGee & Cegala 1998; Martinali et al., 2001). Although three of these studies showed a significant increase in participation (Roter, 1977; Greenfield et al., 1985; McGee & Cegala, 1998) and two showed non-significant increases (Thompson et al., 1990; Martinali et al., 2001). While it may be expected that greater participation would lead to an increase in the length of the consultation, generally this does not appear to be the case. In an intervention study designed to increase patient question-asking, using a question prompt sheet, which was targeted at both patients and doctors, the experimental group had significantly shorter consultations (Brown et al., 2001). The explanation given by the authors for this finding was that inviting patients to prepare for the consultation by focussing on possible questions and then addressing them, helps with organising the consultation more efficiently, thus avoiding indirect discussion while the patient tries to clarify their concerns (Brown et al., 2001).

In summary, all of the process measures showed the same pattern. The differences between the groups failed to reach significant levels, but in all cases, there was a non-significant trend in the expected direction. Experimental group patients did show a tendency to ask more questions, and make more Disclosures and Reflections, suggesting that the intervention video may perhaps have a marginal effect on the experimental group patients in these specific categories. As a result, patients in the experimental group did talk more, demonstrated by the overall number of utterances, and did have slightly longer consultations, indicating a very modest increase in overall participation by the experimental group.

The findings from the analyses of the process of communication are consistent with six of the sixteen intervention studies reviewed that considered process measures, where the results were found to be not statistically significant but non-significant increases in the expected direction were reported (Tabak, 1988; Thompson et al., 1990; Butow et al., 1994; McCann & Weinman, 1996; Tennstedt, 2000; Martinali et al., 2001). There are several possible explanations for this. The intervention was targeted at a heterogeneous group of individuals, therefore there would be considerable variability in responses to the intervention making smaller effects more likely. The video was shown to the patients immediately before their appointments, giving the patients very limited time to consider the contents of the video, acknowledge its message and to implement the recommendations. In addition, there was no time available for rehearsal or other method of reinforcing the desired behaviour change. Previous studies using video were shown to significantly increase patient participation (Wallston et al., 1979; Anderson et al., 1987; Lewis et al., 1991), but one of the studies used face-to-face methods simultaneously (Wallston et al., 1979) and another targeted both patients and doctors (Lewis et al., 1991), which may have increased the likelihood of success. Generally, the

more labour intensive face-to-face interventions have been shown to significantly increase patient participation (Roter, 1977; Greenfield et al., 1985; McGee & Cegala, 1998; Brown et al., 1999). This suggests that patient interventions may need to be more intensive.

### 8.3. The impact of the intervention on the outcomes of the consultations

It was predicted that patients in the experimental group would be more satisfied post-consultation than patients in either of the control groups. The results did not support this hypothesis, as there were no significant differences between the groups on any of the four subscales of the Medical Interview Satisfaction Scale or on the total score. The mean for the whole sample was 153.4 and for comparative purposes this has been transformed into a percentage that equates to 76% total satisfaction. This was just marginally lower than found in general practice in the UK where two studies reported satisfaction rates of 77% and 77.6% (Kinnersley, Scott, Peters, Harvey, and Hackett, 1996; Howie, Heaney, Maxwell & Walker, 1998). These rates of satisfaction are relatively high, which is a common finding in the patient satisfaction literature, albeit not quite as high as the 83-97% reported to be highly satisfied by Williams & Calnan (1991). The revised form of the MISS, which uses a seven-point scoring scale in place of the original five-point scale, seems to have overcome the problem of ceiling effects that have been noted in some intervention studies (Thompson et al., 1990; Hornberger et al., 1997; Tennstedt, 2000).

The measurement of patient satisfaction is one of the most frequently used outcome measure in patient communication interventions. Twelve of the intervention studies reviewed measured satisfaction, but only two reported significant increases (Lewis et al., 1991; Fleissig et al., 1999), and three reported non-significant trends in the expected

direction (Tabak, 1988; Thompson et al., 1990; Martinali et al., 2001). A more recent intervention study also found no differences in patient satisfaction between their intervention group and the other groups, even though the intervention was positively endorsed by the doctor (Brown et al., 2001).

Several propositions have been put forward to explain the lack of increase in patient satisfaction, where increased patient participation has been found. Greenfield et al., (1985) suggested that in comparison to Roter's (1977) study where there was a significant decrease in patient satisfaction, their intervention promoted a non-adversarial method of increasing patient participation, since they discussed the difficulties of doctors who are unaccustomed to involving their patients in medical decision-making and gave patients specific strategies for overcoming this. Another suggestion was that patient satisfaction may develop more fully over time, as the information gathered during the consultation is utilised in everyday life (Tabak, 1988). Hornberger et al., (1997) suggested that their intervention may have raised patients' expectations that the doctor would discuss concerns beyond what was actually achievable. It was also noted that a high proportion of patients were seeking symptom resolution, but only a small proportion reported that any action was taken to achieve this, leading patients to report a less satisfactory encounter (Hornberger et al., 1997). Two further explanations have been suggested that relate to the patients' health status. Firstly, in the context of cancer consultations, it has been suggested that the patients may overlook aspects of the consultation or the behaviour of their oncologist that they are less satisfied with, more than general practice patients with less severe illness, as cancer patients are more dependent on the skills and capabilities of their consultants (Brown et al., 1999). Secondly, in a study with cardiology patients, the authors suggest that there may be the tendency towards socially desirable answers resulting in a lack of significant results,

since the patients could feel dependent on their cardiologist, they may be unwilling to express dissatisfaction with their visits to the doctor (Martinali et al., 2001). More generally, some satisfaction questionnaires have been demonstrated to be insensitive in detecting dissatisfaction (Brown et al., 1999). In this study, any of the above suggestions might have contributed to the lack of an increase in satisfaction. It could be that if all patients reported being satisfied, the effects of the intervention could not contribute to a further increase in satisfaction.

While the Medical Interview Satisfaction Scale was designed to measure patient satisfaction with a particular medical encounter, with the emphasis on communication, the patients' responses are likely to have been influenced by many other factors. Examples of such factors include individual patient differences, the general ambience in the clinic, the way other staff in the clinic interacted with them, length of time waiting for appointment, whether the outcome of the appointment was what they expected and their overall mood state. It is possible that these factors serve to mask any differences in satisfaction that there may have been due to the intervention, or that there simply were no effects due to the intervention.

It was hypothesised that patients in the experimental group would be less anxious post-consultation. This hypothesis was not supported, as there were no significant differences post-consultation and no significant interaction was found between experimental group and pre- and post-consultation anxiety. This is consistent with the findings from a number of the reviewed intervention studies where there was no change or a non-significant decrease in anxiety (Thompson et al., 1990; Lewis et al., 1991; Brown et al., 1999). However, one study reported that an intervention increased anxiety, with a group who received a question prompt sheet displaying significantly more anxiety post-

consultation than another group who received the prompt sheet but then saw a doctor who responded proactively to patients' questions (Brown et al., 2001). While it had been anticipated that anxiety would be lower post-consultation for the experimental group, this did not occur, but it does confirm that the experimental video did not have the potentially deleterious effect on this group of patients by increasing anxiety. Levels of anxiety found in this study were lower than anxiety levels found in different samples during the development of the short-form of the STAI (Marteau & Bekker, 1992). However, two studies conducted in primary care in the UK using the short six-item version of the STAI (Rose, Humm, Hey, Jones & Huson 1999; Qureshi, Standon, Hapgood & Hayes, 2001) also found that their pre-consultation means were lower than those found during the development of the short-form STAI, with the mean for this study falling mid-way between the two. This suggested that in the current study patients visiting cardiology outpatients were not more anxious than other groups of patients at that particular time.

It was thought that the experimental group patients would demonstrate a greater sense of control over their recovery. Again, this hypothesis was not supported, as no differences were found between the groups. In the current study, Recovery locus of control was measured immediately post-consultation. It is possible that a sense of control over recovery may not occur immediately but could take longer to develop, in which case it would have been a useful concept to measure again later. The measurement of locus of control has not been widely used in intervention studies of this kind, but of the two of the earlier studies that used a measure of control both found a significant increase in their experimental groups (Roter, 1977; Thompson et al., 1990).

The final measure immediately post-consultation was patients' perceived ability to have communicated effectively with the doctor, where it was predicted that the experimental group would have higher scores. This hypothesis was not supported by the results as no significant differences were found between the groups. The data was negatively skewed with a mean of 16.8 out of a maximum score of 20, indicating that most patients reported that their ability to communicate with the doctor was high in the four categories of communication measured (understanding what they had been told by the doctor, ability to ask questions, ability to express concerns and feelings, and to summarise or clarify information if they wanted to). Despite the high self-report scores on their ability to communicate with the doctor, the evidence does not support that this was actually put into practice, as Questions and Reflections represented a very small proportion of the overall verbal communication. The situation is more difficult to assess when considering Disclosures as there is no means of determining what proportion of the overall disclosures were due to patients expressing concerns and worries, although this problem could be overcome by performing a qualitative analysis on the transcripts.

It was anticipated that patients in the experimental group would show greater recall of diagnosis and of other health recommendations, plus have higher scores on the measure of their perceived level of understanding the information that they had received. This was shown not to be the case as no significant differences were found. While some intervention studies have reported a significant increase patient recall (Robinson & Whitfield, 1985; Lewis et al., 1991; McGee & Cegala, 1998), others have not (Thompson et al., 1990; Butow et al., 1994). In a recent intervention study that targeted both patients and doctors, patients recalled significantly more information (Brown et al., 2001). Overall scores in the current study were high for patients' perceived understanding of information received, suggesting that patients believed that they

understood the majority of what they had been told, although patients may be reluctant to admit that they had failed to understand.

The hypothesis that patients in the experimental group would show greater self-reported adherence to treatment recommendations was not supported. There were no differences found either for adherence to medications or for behavioural recommendations. However, some unexpected problems arose with measurement of adherence. The majority of patients were not prescribed any medications nor given any other health recommendations. Many of the patients were found to have no diagnosable cardiac problem and were discharged immediately. Therefore, no diagnostic tests were suggested, no diagnosis was given and no medications prescribed. The senior consultant suggested that approximately 60% of patients fall into this category. These patients were given an explanation for their symptoms, most frequently 'palpitations' (an awareness of your heart beating), and for some behavioural recommendations were made, such as reducing caffeine or simple strategies for dealing with panic attacks. Those that were not discharged immediately were often sent for further tests, most of which would not be performed on the same day as their appointment and therefore would be returning at some later date for a follow-up appointment to get their test results. Therefore, this group of patients would not be given a diagnosis or recommended and treatments at this stage. Many patients were already on medications and were not prescribed anything new, and any changes being considered would not be instigated until some point in the future.

In the follow-up phase of the study, only 64 patients reported on adherence to medications and 63 to other recommendations, resulting in a small sample size. Although patients were asked to list any new medications prescribed during their

appointment, the majority listed medications that they had been taking for some while. Adherence was measured for medication regardless of whether it had been newly prescribed, as so few patients were given a new prescription, it would have been unfeasible to run an analysis on such a small sample. The results showed very high levels of self-reported adherence to medications. The overall mean was 4.52, with the maximum score being 5 and a lower overall mean 3.59 for adherence to other recommendations. This compares with the findings of Cegala et al., (2000) who reported that their intervention did not have an effect on adherence to medications, but contrasts with their finding that patients were significantly more adherent to behavioural recommendations. The lower results for adherence to other lifestyle recommendations such as diet, exercise and stopping smoking in this study may be because research has shown that these activities are difficult for patients, especially if they are not motivated to make such changes (Cegala et al., 2000).

The assumption that patients in the experimental group would have improved scores on two dimensions of perceived health status, Role Limitations Physical and Mental Health were not supported, as no significant differences found between the groups on either of these dimensions. No differences were found in patients' perceived Role Limitation Physical between the pre-consultation assessment and the follow-up assessment, but a significant difference was found on the Mental Health subscale where at follow-up the patients had significantly poorer scores at this time. The lack of differences found between the groups on these dimensions of health status is consistent with the findings of other studies where no changes in SF-36 scores were observed (McCann & Weinman, 1996; Hornberger et al., 1997).

Patients were asked whether they felt they had received enough information about their condition from the doctor and whether they felt reassured. Again there were no significant differences found between the groups for receipt of sufficient information or whether patients felt reassured about their condition. Overall, the patients reported receiving about the right amount of information and they were fairly reassured, suggesting that the doctors were gauging the patients' informational needs correctly.

It was hypothesised that patients whose expectations of the outcome of their appointment were met would be more satisfied than those whose expectations were not met. This hypothesis was more general and not related to which experimental group the patients had been assigned to. In each of the groups approximately 30% of the patients reported that the outcome of their appointment was not how they had expected it to be. When expectations of outcome were compared to scores on the Medical Interview Satisfaction Scale, patients who reported that the outcome was not as they had expected produced lower scores on each of the four subscales and on the overall satisfaction score.

The comments that patients made regarding their expectations of the outcome of their appointments were consistent with that found in the literature. The most common unmet expectation in this study was wanting a better explanation of their condition. Wanting an explanation of the problem was found to be the most frequently reported unmet expectation in at least two other studies (Williams et al., 1995; Jackson et al., 2001). The next most frequently raised issue was that of 'waiting' too long, particularly for tests and results. This did not relate to waiting for tests on the day of the appointment, but for appointments for diagnostic tests in the future and obtaining these results. This finding was not totally unexpected, as there are long waiting lists for certain diagnostic

procedures in the UK. A number of patients reported that they expected to have diagnostic tests, or more tests than they received. This corresponds with the findings of several studies who reported that a substantial proportion of their patients had a residual desire for further tests and that the lack of tests was related to lower levels of satisfaction (Brody et al., 1989; Williams et al., 1995; Marple et al., 1997; Jackson et al., 2001). Several other observations were made including whether patients obtained or failed to obtain the diagnosis that they expected, change in medications or advice about them, lack of a physical examination and one patient felt the discussion about their emotional status was inappropriate. Two patients expected the seriousness of their condition to be worse and one expected the outcome to be good, suggesting that for this particular patient the outcome was actually not so good. Patients worrying or expecting their condition to be worse than was actually the case was found in 64% of patients in a general medical walk-in clinic (Jackson et al., 2001), suggesting in that sample of patients it was a common concern. Although these findings from this study were based on a relatively small sample they do provide some insights into factors associated with patients' expectations about the outcome of an outpatients appointment, which were related to patients reporting lower levels satisfaction.

### 8.4. General discussion of the between group analyses

All the results of the comparisons between the groups were shown to be non-significant and while disappointing there are a number of possible explanations for this. The patients may have felt overwhelmed by the volume of activities undertaken immediately before their consultation. In the thirty minutes available, the patients received a full explanation of the research. This was to clarify that they understood the purpose of the study, what was expected of them and to provide the opportunity for them to ask any questions concerning the research. Following this they completed the pre-consultation

questionnaire battery, watched the intervention/placebo video and were returned to the waiting room, where often they were called in for their consultation almost immediately. Therefore, by the time they watched the video they may have been fatigued and had little time to digest its contents and consider changing their behaviour accordingly. However, great care was taken in the planning stage of the study to ensure that questionnaire measures were brief to avoid fatigue and all but one of the clinics were run in the mornings when patients would be the least likely to be tired. On balance, the lack of time was more likely to be the most important issue rather than fatigue.

This study specifically recruited patients who had not visited the cardiology outpatients department before, as new patients would not have met their consultant previously and therefore for both parties there would not be any pre-established patterns of communication. However, from the perspective of the doctor the process of conducting consultations is fairly predictable, with little deviation from the formula, as all the consultants need to gather the same information from patients in order to make a diagnosis and formulate a management plan (Shaikh, Knobloch & Stiles, 2001). The mean age of this study sample was 58 with many being middle aged to elderly and although they were new to the cardiology out patient clinic it would be naïve to assume that at least some of the patients did not have extensive experience with the medical profession, either in similar or different circumstances. In order to obtain an outpatient appointment all the patients had been to see their GP in the last year. Seventy nine percent of patients had experience of other outpatient departments and 77% of patients had spent time in hospital, an average of three times. These figures suggest that overall this study sample have had quite extensive experience with health care settings and doctors. Although the patients may not have had pre-established communication patterns with the consultants in this clinic specifically, they may well have pre-

established communication patterns and expectations of the communication process with the medical profession in general. Such communication patterns may not exist, for example, in a younger sample. With these established communication patterns, behaviour change may be much harder to instigate by means of a brief intervention. A short video intervention may not have sufficient influence on patients' verbal behaviour particularly as there was no time for rehearsal of these skills.

The consultants who volunteered to participate in this study were all senior practitioners, with many years of experience of direct patient contact in a very busy clinic with a huge throughput of patients. In the current study, the consultants undertook the responsibility of recording their interviews. This may have led to a heightened awareness of their role in the consultations and might have resulted in them making a concerted effort to consider their verbal behaviour, knowing that the audiotapes would be analysed and consequently this may have contributed to the minimal effects of the experimental video. While this was possible, it is unlikely given the large number of audio recordings made over many clinic sessions and the doctors were unaware of what was going to happen to the tapes in terms of analysis. Additionally, in the cardiology outpatient clinic this study was conducted in, the consultants are also used to being observed by groups of medical students who sit in on consultations.

Difference in outcome variables, comparing patients by group, would be unlikely to be the consequence of the clinic environment, as this remained fairly stable over the study period. Although the patients were seeing different consultants sometimes on different days of the week, it was standard procedure for all new patient appointments to be scheduled at the beginning of each clinic session. As a result most patients were not kept waiting unduly past their allotted appointment time, unlike patients whose

appointments were later in the session. The core clinic staff i.e. the receptionist, clinical care co-ordinators, and staff nurses, remained the same over the study period. Routines in the clinic also remained constant and the clinic surroundings were pleasant, newly decorated and clean. Overall, patients' experiences with the clinic were very similar.

Finally, it is also possible that the lack of main effects was due to the characteristics of patients who volunteered to participate in this study, knowing in advance that it is a communication study and that their consultation would be audiotaped and the subject of scrutiny. There exists the possibility that these patients are for example, more confident, assertive, perceive themselves better communicators, among other possible characteristics than the population in general, which may partially explain the limited effects of the intervention. This suggests that the video intervention may have a more powerful effect on the general population.

### 8.5. Individual patient characteristics and the process of communication

The second principal aim of this study was to examine the role of individual patient differences on the consultation process, the outcomes of the consultation and the intervention, as it was thought that the effects of the video intervention might have been moderated by individual patient characteristics. The literature on intervention studies illustrated that this was a neglected area of research as only three of the twenty studies reviewed considered this issue (Wallston et al., 1979; Anderson et al., 1987; McCann & Weinman, 1996).

This aspect of the research was exploratory rather than hypothesis driven, so the role of individual patient differences on the process of communication and outcomes was initially explored using correlations and t-tests. The individual patient differences

considered were age, education, gender, whether English was spoken as a first language, anxiety, perceived health status, health related cognitions, and assertiveness.

A number of significant relationships were identified between the individual patient characteristics and the process variables, but overall the associations were all relatively low. This was not surprising as it has been established that subjective perceptions and behavioural measures do not always correlate well (Street, 1992).

Interestingly, in this sample of patients, age was not found to be related to any of the process variables. This contradicts earlier studies where younger patients engaged in more question-asking behaviours (Butow et al., 1994; Street et al., 1995; McCann & Weinman, 1996). Apart from a weak positive correlation between patients' education and the length of the history-taking segment, education was not associated with any other of the process variables. This finding contrasts with results from earlier work, that found that more highly educated patients asked more questions, produced more expressions of concern, and generally were more active communicators (Street et al., 1995).

The results provided no evidence to suggest that there were any differences between men and women on any of the process measures, in terms of the length of the consultations, amount of patient talk, Disclosures, Questions and Reflections. This partially contradicts an earlier intervention study finding (Butow et al., 1994) where female outpatients asked more questions. Another study found a significantly higher word count for females in consultations than for males (Lunn et al., 1998).

A significant correlation was found for patients' whose first language was not English and the number of Reflections, suggesting that these patients were attempting to clarify or summarise what was being said. Patients' first language and the number of Questions asked almost reached significance, with patients whose first language was not English asking more questions, which could tentatively be considered as attempting to seek a better understanding of what was being said. This suggests that health care professionals need to be aware of patients' level of understanding verbal communication, as patients who appear to be highly proficient in speaking English may not understand to the same level.

Patients' level of anxiety prior to their consultation was significantly associated with greater participation during their appointment. Patients who were more anxious participated to a greater extent than those who were less anxious. More anxious patients also had longer consultations and talked more both overall and in the history-taking segment. They also asked more Questions and made more Disclosures and Reflections. Greater pre-consultation anxiety was also associated to poorer perceived health status on all dimensions of the SF-36, with the exception of the Pain subscale. The strongest of these relationships was between anxiety and the Mental Health subscale ($r = -0.52$). This suggests that patients' level of anxiety may be related to concerns over their perceived health status, which translated into being more verbally active during the consultation.

Perceptions of health status were also related to the measures of the process of communication. The greatest associations were between the Mental Component Summary of the SF-36 and the length of time taken in the history-taking segment of the consultation, the total consultation time and the number of patient utterances in the

history-taking segment. The other relationships that were significant at the 0.01 level were between three of the SF-36 subscales and process variables. Role Emotional was related length of time in the history-taking segment, Mental Health was associated with the number of patient utterances in the history-taking segment and Energy/Vitality was related to the overall length of the consultation. However, all three of the subscales are composite parts of the Mental Component Summary. This suggested that patients with lower scores in the domain of psychological well-being had longer consultations and they talked more during the history-taking segment. Whether this increased participation was due to solely to the patients responding to their own needs, or because the doctors recognised poorer psychological functioning in these patients and for that reason encouraged greater participation, remains a matter for speculation.

The desire for information involvement in the consultations, as measured by the Health Opinion Survey, showed that patients with higher scores on the information subscale did participate more. They had longer consultations, probably as a consequence of talking more in the concluding segment and overall. These patients also asked more Questions suggesting that the desire for information converted into an information seeking behaviour.

Surprisingly, in this study patient assertiveness was not associated with any of the process variables, particularly as research has shown that in the context of communication intervention studies individuals who are highly assertive ask more questions (Wallston et al., 1979; Anderson et al., 1987). Previously investigators have found significant correlations between the Rathus Assertiveness Schedule (RAS) and behavioural performance (Williams & Stout, 1985), and that the percentage of items in the full 30-item version of the RAS relating to 'initiating or maintaining conversation'

was found to be higher than in other measures of assertiveness (Furnham & Henderson, 1983). Perhaps the shortened 10-item version of the measure used in this study does not capture this aspect of verbal behaviour as well as the original version, although Wallston et al., (1979) found that the shortened version was predictive of question-asking behaviours. Moreover, in this study, patients were neither particularly assertive nor unassertive, as the range of possible scores was between 10-60 and the mean (sd) was 37 (9). This may partially explain the lack of a relationship between assertiveness and verbal behaviours. The lack of a relationship between assertiveness and the process measures was also surprising in the light of the moderate correlation ($r = 0.47$) between the information subscale of the HOS and participation.

To assess whether individual patient differences or the intervention predicted patients' verbal contribution to the consultation a hierarchical multiple regression was performed. In the first block the individual patient differences that were significantly associated with the total amount of patient talk were entered into the equation. These were the information subscale of the HOS, pre-consultation state anxiety and the mental component summary score of the SF-36. The experimental groups were entered in the second block. The results of the regression showed that the individual patient differences accounted for 7.1% of the variance in the total number of patient utterances, although the information subscale of the Health Opinion Survey was the only significant predictor. This indicates that expressing a desire for information does translate into being more verbally active in the consultation and supersedes the effects of anxiety and psychological status. However, these psychological measures only accounted for a very small proportion of the variance in this measure of patients' verbal behaviour. The addition of the experimental groups did not contribute significantly to the variance in

the total number of patient utterance and adding the experimental groups reduced the overall variance in patient utterances to 6.8%.

### 8.6. Individual patient characteristics and the outcomes of communication

The role of individual patient differences and measures of outcome of the consultation were also investigated. Generally, no significant relationships were found between patient demographic variables and any of the measures of outcome. Patients' age was not significantly related to satisfaction, which concurs with findings from two previous studies (Anderson & Zimmerman, 1993; Murphy-Cullen & Larsen, 1984), but is in contrast to findings from other studies, where older patients have tended to report greater satisfaction (Cohen, 1996; Like & Zyzanski, 1987; Linder-Pelts & Stewart, 1986; Williams & Calnan, 1991; Young et al., 2000). The level of patients' education was unrelated to satisfaction in this study, supporting earlier findings (Like & Zyzanski, 1987; Murphy-Cullen & Larsen 1984; Williams & Calnan 1991). There were no significant associations between patient gender and satisfaction. These results were in accordance with those of Delgado et al., (1993) and Murphy-Cullen & Larsen (1984), but other studies have shown that female patients to be more satisfied (Like & Zyzanski 1987) or less satisfied (Williams & Calnan 1991) than male patients. The differences in findings among the studies is likely to be due to the differing demographic make-up of the samples, medical settings and geographic locations. The one exception to this lack of relationship between the demographic variables and satisfaction relates to the patients' first language, where patients whose first language was English were significantly more satisfied than patients whose native language was not English.

As expected, pre-consultation anxiety was significantly associated with post-consultation anxiety scores. Pre-consultation anxiety had a negative relationship with

the compliance intent subscale and the total scores of the satisfaction scale. Therefore, more anxious patients tended to be less satisfied, a finding that has been previously reported in the literature (Carter et al., 1982; Inui et al., 1982; Ong et al., 2000). This tendency may occur because anxious patients may focus more on the negative aspects of medical encounters or as mentioned earlier the more anxious patients had poorer perceived health or poorer actual health as there may have been a difference in diagnosis between more and less anxious patients. A number of the SF-36 subscales were negatively associated with post-consultation anxiety. Those found to be significant that were, Role Physical, Mental Health, Energy/Vitality, General Health Perceptions and the Mental Component Summary, indicating that poorer health status in these domains were related to higher anxiety.

Some of the SF-36 subscales were positively related to satisfaction. In particular, the mental health subscale, was significantly associated with three of the satisfaction subscales (Distress Relief, Communication Comfort, Compliance Intent) and the total score. Energy/Vitality was significantly related to Distress Relief, Compliance Intent and the total score. General Health Perceptions were associated with Compliance Intent. The Mental Component Summary was significantly associated with all satisfaction subscales and the total satisfaction score. Overall, these relationships suggest that better psychological functioning was associated with patients reporting higher levels of satisfaction.

The Internal Health Locus of Control scale was significantly associated with the Recovery Locus of Control scale (RLOC). This finding was unsurprising as higher scores on the RLOC reflect greater internality. Assertiveness was unrelated to levels of patient satisfaction in the current study, although previous research has shown a

relationship between a greater amount of patient verbalisations and satisfaction (Anderson et al., 1987). In the current study, as previously mentioned patients were neither particularly assertive nor unassertive and assertiveness was not related to the process measures. This may partially explain the lack of a relationship between assertiveness and outcome measures such as satisfaction.

To assess whether individual patient differences or the intervention predicted patients satisfaction a hierarchical multiple regression was performed. In the first block the individual patient differences that were significantly associated with patient satisfaction were entered into the equation. These were English spoken as a first language, anxiety and the Mental Component Summary of the SF-36. The experimental groups were entered in the second block. The results of the regression showed that the individual patient differences accounted for 8.2 % of the variance in patient satisfaction although English spoken as a first language and the Mental Component Summary of the SF-36 emerged as significant predictors of patient satisfaction. The addition of the experimental groups did not contribute significantly to the variance in patient satisfaction and adding the experimental groups reduced the overall variance in patient utterances to 7.6%. This indicates that individuals whose first language is English and those with better psychological well-being are more satisfied with their consultations.

All the patients whose native language was foreign spoke English fluently and had no problems either with reading or writing in English. However, this group was shown to be less satisfied. This may be due to differing cultural expectations of a medical consultation or alternatively their comprehension of the conversation that took place may not be as good as their apparent proficiency in English, leading to lower levels of satisfaction. This notion was supported by evidence that this group of patients made

significantly more Reflections, suggesting that they were attempting to clarify or summarise what was being said.

Patients with lower scores on the Mental Component Summary of the SF-36 were also significantly less satisfied, perhaps because this group of patients were less able to see the consultation in a more positive light or because the doctor was unable to fulfil their particular needs to their satisfaction. This concurs with the findings of a recent study using a shortened version of the SF-36, where better functioning was related to greater satisfaction immediately post-visit and at two weeks and three months (Jackson et al., 2001). Psychological distress has been shown to be related to satisfaction, where the greater the distress the more dissatisfaction is reported (Greenly et al., 1992). Psychiatric patients have also been shown to be less satisfied with their care than patients without a psychiatric disorders (Hermann et al., 1998; Alexius et al., 2000). Contrary to these findings, another study found no differences in satisfaction rates between patients with specific categories of mental disorders including major or minor depression and anxiety disorders (Jackson et al., 2001). Research using the SF-36 demonstrated that dissatisfaction was related to four of the SF-36 subscales (General Health Perceptions, Social Functioning, Mental Health and Bodily Pain) (Cohen, 1996). No such relationship was found between bodily pain and satisfaction in this study, perhaps because Cohen's study was based on a very large sample of over 6,000 and included a much broader range of patients.

On examination of the relationships between the process of communication and patient satisfaction, only one significant negative relationship was found, between patient Questions and satisfaction. This negative relationship between question-asking and satisfaction has also been found in consultations with oncologists (Ong, Visser, van

Zuuren, Rietbroek, Lammes & de Haes, 1999; Ong et al., 2000). It was suggested that this was because the patients who actively sought medical information by asking questions failed to receive more information (Ong et al., 1999). An alternative explanation could be that dissatisfaction led to more questions being asked to gain information when it was assumed that it should have been provided spontaneously, although an earlier study (Tabak 1988) found no relationship between question-asking and general satisfaction. Nevertheless, it has been observed that doctor-patient interactions do not necessarily have a linear relationship with patient outcomes such as satisfaction, because of the continuous effect the doctor and the patient have on each other in the interview (O'Brien & Petrie 1996). It has been also been argued that the intensity of the interaction is related to patient satisfaction, that is, the more that is said, the more satisfied patients appear to be (Roter, 1984). The balance of talk between both parties in Roter's study was 43% contributed by patients and 57% contributed by doctors, and similar proportions have been reported by other studies. In this study the balance of doctor to patient utterance is virtually equal with doctors contributing 50.2% of all utterances.

Overall, individual patient characteristics only accounted for only a small proportion of the variance in patient participation and satisfaction. This suggests that targeting interventions at particular sub-groups of patients would probably be unwarranted. In practice directing an intervention at particular groups of individuals would be unfeasible, as it would require routine assessment of patient characteristics, would be labour-intensive and undoubtedly considered unnecessary, as many patients assessed would not receive the intervention. However, to only deliver an intervention to sub-groups of patients would be inconsistent with the concept of treating all patients equally.

### 8.7. The influence of the doctors on the consultation process

The third aim of this study was to investigate the influence of the doctors on the consultation process, the outcomes of the consultation, and the intervention. This area of enquiry was very much neglected in the intervention studies reviewed.

There were no significant differences in patient question-asking comparing the consultations of the four doctors. A similar result was found for patient Reflections, where there was no evidence to suggest that there were differences between the doctors in patients' paraphrasing or repeating behaviours. These findings could suggest that the doctors were either very clear in what they were saying so that patients did not need to ask questions or attempt to clarify any information, or that the patients were just passive participants in the consultation and accepted what was being said regardless of their understanding of the situation. Differences in the frequency of question-asking behaviours have been noted in a previous study, where more questions were asked in longer consultations by younger patients and female patients (Butow et al., 2002). However, in another study no differences in question-asking were found between intervention groups using a question prompt sheet, regardless of whether the doctor pro-actively supported the intervention or not (Brown et al., 2001), suggesting that differences in doctors' verbal behaviour does not necessarily impact on patient question-asking behaviour.

Disclosures were the second largest category of patient verbal behaviours. There were significant differences among doctors in the number of patient Disclosures in both parts of the consultation and overall. The most notable feature of these results was that patients of Dr C made the fewest Disclosures, 31 in comparison to the sample mean of 57, suggesting that these patients were revealing significantly less information than

patients seeing the other three doctors. From this it may be possible to assume that there was something about this doctor's verbal behaviour or manner that did not facilitate or permit as many patient Disclosures as the other doctors did. Patients of Dr A and Dr B made the greatest number of Disclosures in the history-taking and overall in the consultations. In this study patient Disclosure was found to be unrelated to patient satisfaction, but in previous research using the VRM, patient Disclosure in the history-taking segment, was positively related to satisfaction (Putnam, Stiles, Jacob & James, 1985). Differences in the number of patient Disclosures between the doctors may vary according to whether the doctor enquires about psychosocial issues (Robinson & Roter, 1999). It has been reported that increases in psychosocial disclosure can be achieved if doctors add one or two questions about mood or interpersonal problems to their clinical interviews (Robinson & Roter, 1999). Another factor that appears to influence psychosocial disclosure is patients' age. One study showed that in an outpatient setting, more psychosocial topics were raised by younger rather than older patients (Greene, Hoffman, Charon & Adelman, 1987). These investigators suggested that this was perhaps because older patients are more likely to believe that medical visits are for medical problems. Equally, the doctors in that study raised fewer psychosocial issues with older patients than with younger patients (Greene et al., 1987). It has also been suggested the first consultation is most important for building an effective relationship, the second for discussing treatment matters, and the third for raising psychosocial issues (van Dulmen, Verhaak & Bilo, 1997). This raises the possibility that the consultations in this study were not particularly conducive to either party raising psychosocial issues.

Significant differences were found in the number of utterances between both doctors and patients in terms of the number of utterances made in the history-taking, conclusion and overall. There was considerable variability in the mean number of patient utterances

between the doctors during the history-taking segment, with Dr B's patients talking the most and Dr C's patients the least, suggesting differences in consulting style in terms of encouraging patients to participate in the consultation. However, it was also shown that Dr B uttered the most and Dr A the least, suggesting that more or less doctor conversation is not directly related to the amount of patient conversation. Gender differences in the number of utterances were also observed, with female doctors uttering more than male doctors. These results agreed with those of an earlier study (Hall, Irish et al., 1994) but contrasted with results from another, where no significant differences were found (Lunn et al., 1998). However, more generally female doctors have been found to be more talkative and have longer consultations because they tend to make more positive statements and use more partnership-building language (Meeuwesen, Schaap & Van der Staak, 1991; Roter, Lipkin & Korsgaard, 1991).

In the history-taking segment, patients all uttered more than the doctors with the exception of Dr C's patients who uttered less. This finding is mostly in accordance with the function of the history-taking segment where the patient describes the problem in an attempt to inform the doctor about their condition (Shaikh, Knobloch & Stiles, 2001). It is probably reasonable to expect patients to talk more than the doctors in this segment as patients relay the details of their health problem to the doctor. Particularly, as this was the first time patients had met their consultant a detailed history would be necessary. Dr A's patients had the largest mean difference in doctor versus patient talk, suggesting that this doctor either allowed the patients more freedom to talk freely or asked more open-ended questions that resulted in more complex responses. The mean difference in doctor versus patient talk for Dr's B and D was less than half the difference for Dr A, possibly suggesting the use of more closed-ended questioning. The patients of Dr C talked less than the doctor, leading to the possibility that Dr C may have a more

controlling style or used more closed-ended questions that only required a simple yes/no response from the patient resulting in less conversation. However, the VRM system does not make a distinction between the types of questions asked. It has been recognised that both doctors and patients believe it is appropriate that doctors should have a substantial influence on the direction and content of consultations (Waitzkin, 1995). Consequently, it would appear that patients are more active in the consultation if allowed and encouraged by the doctor, but if not patients acquiesce to the doctors authority.

Throughout the concluding segment, the amount of patient utterances followed a similar pattern to that observed in the history, with Dr B's patients talking the most and Dr C's patients the least. A different pattern emerged for the number of doctor utterances with Dr C uttering the least and Dr D uttering the most. During the concluding segment, the doctor generally conveys information and explanations to the patient about treatment, further tests, medications and future appointments (Shaikh et al., 2001). The patients are also expected to listen attentively to the doctor, agree to follow directions, and then ask questions about anything not clearly understood (Shaikh et al., 2001). It is possible that Dr C and Dr D communicate the relevant information and explanations to the patient but not in a manner that allows the patient to participate in the conversation.

During the concluding segment the doctors all talked more than the patients. Again this is probably to be expected as the doctor will have evaluated what the patient has said, conducted a physical examination, and uses the time to relay an interpretation of the findings along with any recommendations (Shaikh et al., 2001). However, there was considerable variability in the amount of doctor versus patient talk. The amount of utterances between Dr A and patients was almost equal, with the doctor talking slightly

more than the patients did. This difference is slightly greater for Dr B, and increases for Dr C and Dr D who talked considerably more. This suggests perhaps that Dr C and Dr D have a more controlling or informative style and expect their patients to take a more verbally passive role.

When the results of the whole interview were considered, despite the variability in the number of utterances between both doctors and patients, Dr A and Dr B's patients talked more than the doctors, but Dr C and Dr D talked more than their patients. Despite some of the variability discussed here, overall in terms of the numbers of utterances made by doctors and patients in each of the segments of the consultation, the results are similar to those found by Stiles, Putnam & Jacob (1982). This finding suggests the possibility that Dr A and Dr B may have more positive attitudes towards psychosocial issues, as this tends to result in more collaborative relationships (Levinson & Roter, 1985). This pattern of communication is indicative of the 'patient-centred' style that has been associated with higher satisfaction than the more traditional dominant style (Levinson & Roter, 1985).

Significant differences were found between the doctors in the length of the history-taking segment, with Dr B taking significantly longer histories than the other three doctors. This finding was not surprising, considering that this doctor talked the most. The concluding segment was somewhat shorter, but mirrored the history-taking segment in terms of the differences between the doctors. Significant differences were found when the history and conclusion were combined, with Dr B having longer consultations than Dr's C and D. Again, this was expected as both Dr B and Dr B's patients talked the most. The longest consultations were approximately fifteen minutes long and the shortest were in the region of nine and a half minutes. This was a mean difference of

five and a half minutes, which represents a substantial amount of time in terms of communication, as much conversation could occur in this amount of time. Previous research has shown that female doctors tend to have longer consultations than male doctors (Hall et al., 1994; Meeuwesen et al., 1991). While this was true for one of the female doctors is was not for the other, therefore differences in doctors' communication style are more likely to account for differences in consultation length rather than gender differences.

In this study, no significant associations were found between the length of the consultations and patient satisfaction. This is contrary to findings reported in general practice where patients have reported greater satisfaction with longer consultations (Howie, Porter, Heaney & Hopton, 1991; Wilson, 1991), and where patients perceived consultations to be longer when actually they were (Cape, 2002). Patient concerns about time may be as much about quality time as actual time (Cape, 2002).

Substantial variation in length of consultations between doctors has been observed previously (Andersson & Mattsson, 1989). Although much of the research has been conducted in general practice, the same factors are likely to be relevant in an outpatient setting. The doctor's consultation 'speed' was shown to account for 22.5% of the variation in consultation length in one study (Andersson, Ferry & Mattsson, 1993). The gender and age of the doctor have been shown to be unrelated to the length of consultations (Deveugele, van-den-Brink-Muinen, Bensing & De-Maeseneer, 2002).

In consultations where psychosocial issues were considered important by both doctor and patient, they lasted longer than consultations concerning biomedical problems only (Deveugele, Derese, van-den-Brink-Muinen, Bensing & De-Maeseneer, 2002).

Generally, it has been found that where patients desire to discuss psychosocial problems they have longer consultations than those who discuss the physical characteristics of their health problem (Andersson & Mattsson, 1989; Howie, Heaney & Maxwell, 1995). Analyses at the doctor level show that doctors who spend more time in consultations enable patients and are more likely to be patient-centred (Howie, Heaney & Maxwell, 1997).

In summary, there were significant differences in the amount of talk occurring between doctors and their patient and the length of the consultations. Overall, more talk resulted in longer consultations. In addition, the ratio of doctor to patient talk was variable, suggesting quite different consulting styles between the doctors.

To assess whether individual patient differences or the doctors predicted patients' verbal contribution to the consultation a hierarchical multiple regression was performed. In the first block the individual patient differences that were significantly associated with the total amount of patient talk were entered into the equation. These were the information subscale of the Health Opinion Survey, pre-consultation state anxiety and the Mental Component Summary score of the SF-36. As discussed in the section on individual patient differences the individual patient differences accounted for 7.1 % of the variance in the total number of patient utterances, although the information subscale of the HOS was the only significant predictor. The doctors were entered in the second block with two of the doctor variables emerging as significant. The addition of the doctors increased the variance in the total number of patient utterances to 20.1% representing an increase of 13%. This analysis suggested that the doctor's role in the consultation is influential in facilitating patient conversation and has a greater influence on the patients' verbal participation than patient preferences for informational involvement or

psychological well-being. Under the circumstances, the influence of the doctors is unsurprising, as this sample of patients were new to the clinic and in unfamiliar surroundings that may be seen as the doctor's province.

### 8.8. The influence of the doctors on the outcomes of the consultation

The exploration of the influence of the doctors on the outcomes of the consultation revealed some interesting findings. A significant interaction effect was found between pre-and post consultation anxiety and doctor. The patients of Dr A were significantly less anxious after their consultation than they had been before their consultation and patients of Dr D showed the same non-significant trend. The reverse was found for Dr B and Dr C, where their patients showed a non-significant trend to be more anxious after their consultation than they had been before. A previous study found that doctors who were more patient-centred and possessed a more facilitative style were particularly effective in lowering patients' post-consultation anxiety (Takayama et al., 2001), which might explain the findings here. Another study established that the informativeness of the doctor varied most in relation to patient anxiety, where anxious patients received more information particularly about diagnostic and procedural issues (Street, 1991). Furthermore, receipt of information may encourage a better understanding of health related issues leading to a reduction in anxiety (Roter, Hall & Katz, 1987; Waitzkin, 1985). Alternatively, these differences in anxiety in the current study might be related to the length of consultation. Dr B had the longest consultations with the greatest amount of patient utterances and Dr C had the shortest consultations with the least amount of patient utterances. This suggests that there may been optimal length of consultation or amount of talk that patients in general expect, and if it is too much or too little, the result is an increase in anxiety.

patients were shown to be more satisfied, concurring with the findings of other research (Delgado et al., 1993; Murphy-Cullen & Larsen, 1984).

Caution needs to be exercised in the interpretation of these results on satisfaction because there may be other explanations for patients being more satisfied with male doctors in this particular instance as other characteristics of the doctors have been linked to patient satisfaction. For example, in this study, the male doctors were more experienced in terms of the number of years since qualifying as doctors, and the male doctors were older than the female doctors were. Although some studies have found no significant differences in patient satisfaction relating to level of doctor training (Like & Zyzanski, 1987) or number of years in practice (Anderson & Zimmerman, 1993), one study did find that older looking doctors showed a tendency to receive higher satisfaction ratings than younger looking doctors (Hall et al., 1994).

No significant differences were found between the doctors for the Recovery Locus of Control scale or on patients perceived ability to communicate. The latter was subject to ceiling effects so a difference here would have been unlikely. Comparison between the doctors on the 4-6 week follow-up questionnaire was not conducted as the number of participants who responded was much smaller than the original sample and it was felt that any findings here would not be meaningful due to a lack of statistical power.

To assess whether individual patient differences or the doctors predicted patient satisfaction a hierarchical multiple regression was performed. In the first block the individual patient differences that were significantly associated with patient satisfaction were entered into the equation. These were English spoken as a first language, anxiety and the Mental Component Summary of the SF-36. As discussed in the section on

individual patient differences the individual patient differences accounted for 8.2 % of the variance in patient satisfaction although English spoken as a first language and the Mental Component Summary of the SF-36 emerged as significant predictors of patient satisfaction. The addition of the doctors increased the variance in patient satisfaction to 12.3% an increase of 4.1%. Two of the doctors emerged as significant predictors of patient satisfaction. Clearly, the patients' ratings of the doctors consulting characteristics and the effect it has on their satisfaction levels is important, as the doctor can influence this quite considerably. Moreover, the Medical Interview Satisfaction Scale would appear to be a sufficiently sensitive instrument to differentiate between the patients' perceptions of the doctors' verbal behaviours in the consultation.

The differences found in both patient anxiety and satisfaction between the doctors were unlikely to be related to potential differences in the patient sample as initial analyses showed that there were no significant differences found between the subgroups of patients seen by each of the doctors for individual patient characteristics.

### 8.9. Patients' response to the experimental video

The patients who comprised the experimental group rated the experimental video on its helpfulness in achieving the four principal aims of the video, which were to help patients to understand what the doctor said, ask questions, express concerns, and to remind themselves of what the doctor had said. Overall, the majority of patients rated that they agreed that the experimental video had helped them in each of these four domains. On average, 60% agreed or strongly agreed that the video helped them, 32% remained neutral as to whether the video was helpful or not and just under 9% reported that they disagreed or strongly disagreed that the video was helpful. The video was rated as being the most helpful in terms of question-asking, followed by reminding and

expressing concerns, and the least helpful for understanding what the doctor had said. Although the video was perceived as being helpful by the patients in these four domains this did not translate into any significant improvements in these areas when the groups were compared. While the video did not measurably increase participation in statistical terms, it was still perceived as being helpful. Perhaps because the video provided a sense of empowerment in terms of suggesting that they could ask questions and express concerns and worries if they wished to.

### 8.10. Individual patient characteristics and the experimental video evaluation

Within the experimental group, further analyses were performed to assess whether any particular patient characteristics were associated with patients' rating of the intervention video. There was a significant positive association between patients' age and higher scores on the video evaluation measure, suggesting that older patients found the video more helpful. A significant positive association was also found between one of scales of the Multidimensional Health Locus of Control, suggesting that those patients who perceived that control over their health was the responsibility of Powerful Others, which in these circumstances probably meant the doctor, reported that the video was more helpful. Significant negative associations were found for both subscales and the total score on preferences for involvement in healthcare (HOS). This suggests that patients who reported less preference for involvement in their health care found the video more helpful. While this may sound counterintuitive, it is possible that the HOS measures how individuals usually behave, i.e. a fixed trait rather than actual preference for involvement. If this were the case, then it would be reasonable to assume that if generally a non-active role were the norm, then a video that gives guidelines on how to take a more active role probably would be rated as helpful. The rationale for this argument lies in the wording of some of the items in the HOS, for example, 'I usually

ask the doctor or nurse many questions about what they are doing during a medical examination.' Patients may respond with a 'No' to such a statement but it does not necessarily mean that that they do not want to ask questions, they are just reporting what they actually do in those circumstances. The Role Limitation Physical dimension of the SF-36 was also significantly negatively related to scores on video evaluation suggesting that patients with poorer self-perceived physical health, in terms of experiencing problems with their work or other daily activities rated the experimental video as being more helpful in taking a more active role in the consultation. This may be because the patients could identify with problems portrayed in the video, particularly as one of the scenarios in the video explicitly deals with the subject of a patient with health concerns that is affecting their ability to work.

These results suggest that overall the experimental video was well received by most patients, especially in terms of assisting with question-asking. The results also indicated that not all patients responded to the video equally. Older patients with poorer perceived physical health, who believed that control over their health was the responsibility of others and who had less desire for involvement in their own medical care, rated the video more helpful than less vulnerable patients. The variability of patients' responses to an intervention has been reported previously (Greenfield et al., 1988), where it was suggested that it might be more difficult for some patients to become more active participants, even when actively encouraged to do so.

Overall, these findings are encouraging, as more vulnerable patients perceived the experimental video as being helpful and the experimental video was not found to have an adverse effect on patient anxiety. Furthermore, under certain circumstances the video did have a positive effect by increasing patient satisfaction, although this was dependent

on which doctor was seen. This suggests that the video is acceptable and that certain patients may derive a benefit from it if shown routinely.

### 8.11. Appraisal of the current study

The aims of this study have been achieved, in terms of overcoming some of the problems of earlier research, by attaining a sufficiently large sample to permit confidence in the results, the use of an objective measure of the process of communication and the use of reliable and valid questionnaire measures. The study has also examined two important but hitherto neglected areas in research into communication interventions. The first was to systematically examine individual patient characteristics, to ascertain which patients may benefit the most from the intervention. While it would be impracticable to direct the intervention at particular subgroups of patients it is of value to know who is likely to derive the greatest benefit. The second was to explore differences in patients' response to the intervention video as a result of which doctor was seen.

While the video intervention solely did not result in the desired changes in the process or outcome measures, it was well received by the experimental group patients. This suggests that if it were shown routinely in an outpatient clinic it would be perceived as being beneficial, especially as the between-doctor analysis revealed that satisfaction was significantly increased in the experimental group when one particular doctor was seen. Therefore, in the 'real' world it is possible that the intervention may be shown to be effective, although as discussed earlier it could be that with a large group of patients only some will benefit.

This study was also important as the systematic literature review only identified three studies that had used a video presentation as the medium for delivering communication interventions (Wallston et al., 1979; Anderson et al., 1987; Lewis et al., 1991), and only the latter of the two studies were conducted with patients. Crucially none of these studies measured question-asking or other verbal behaviours. Therefore, the use of video for the delivery of a communication intervention needed to be thoroughly and appropriately tested, as above all, a video presentation is probably the simplest way to deliver an intervention as it requires no explanation and is not labour-intensive.

At the design stage of the current study, it was decided that an objective method for the quantification of the patients' verbal behaviours was a necessity and the VRM system was selected and applied. Having achieved this there have been criticisms levelled at such methods, which are applicable to this study. Waitzkin (1990) says 'quantitative methods are costly and tedious to use; they yield summary statistics that increase knowledge little in consideration of the time and expense required'. Simple counts of the desired verbal behaviours with reliability checks would probably have been sufficient for the purposes of the study. However, that would preclude any future investigations using the VRM system, which classifies every verbal act that occurs in consultations.

Quantification has also been criticised for not being able to deal with the complexities of medical encounters (Waitzkin, 1990) and in particular, 'renders the social dimensions of the medical consultations invisible' (Wasserman & Inui, 1983). The transcripts show that question-asking is not straightforward and simply counting the frequency of questions tells you little about them. For example, the system does not discriminate between categories of question, such as greetings e.g. 'How are you?' versus symptom

related questions e.g. 'Is that a tumour?' The same problem applies to Disclosures, there is no way of knowing with the VRM system if a disclosure is about a medically related topic e.g. 'I feel the pain here', or has an emotional content such as e.g. 'I am worried about how I will cope'. The same is also true for Reflections, as some individuals habitually repeat what the other has said. It is impossible to distinguish between a simple repetition, a deliberate repetition and someone paraphrasing what the other has said, blurring the distinction between clarifying information and summarising behaviours.

Although there was some evidence to show that a brief video intervention was effective in certain circumstances, its limited effectiveness may be due to the difficulty in changing behaviour patterns or beliefs that may have accumulated over many years and the lack of time for the development of new communication skills. This is likely to be because the timing of the delivery of the video intervention does not permit any time for rehearsal, or for any secondary reinforcement of the message, despite the fact that learning through modelling or observation is supposed to be unintentional and therefore should not require any reinforcement. However, the intervention may have provided some skills and provided a framework for patients to participate more fully in medical consultations as the evidence suggests that with one of the consultants the experimental group were more satisfied.

The intensity of the video may have been weakened by the removal of the negative modelling behaviours that were present in the pilot study video. In addition, while the video is relatively short there is still quite a lot of information for the patients to absorb, the sections 'make sure you understand' and 'remind yourself of what the doctor has said' have similarities are for the sake of brevity could be amalgamated.

It is also possible that taking part in a research project may have served to dilute the potential effects of the video as patients had already completed a fairly comprehensive battery of questionnaires in a short space of time, knowing that there would be more to complete after their appointment. It could be that the patients conceived the questionnaires as the most important aspect of the study, as these took some time to complete before watching the video, thereby directing attention away from the intervention. Equally, patients may have been worrying about their appointment and therefore not seriously attending to the video, particularly as watching a video is a passive rather than an active activity.

Within the confines of this study, only short-term outcomes were evaluated, so it is not known whether there were any longer-term implications of the video intervention. Although, the outcomes assessed by the follow-up questionnaire could be considered medium-term as this information was collected 4-6 weeks after the initial appointment. Ideally, longer-term clinical outcomes and health status should be examined, alongside assessing whether any changes in patients' communication are retained over the longer-term. As we did not follow patients up in the longer-term or evaluate what happened in subsequent appointments it is not known about the longer-term efficacy of the video, which could have had a positive effect in subsequent consultations.

In ideal circumstances, video recording the consultations would have added an extra dimension to our understanding of these doctor-patient interactions, as the non-verbal behaviours between the parties could have been observed. Unfortunately, the clinic did not have video camera equipment installed. The installation of such a system in a large clinic with numerous consulting rooms would have represented major capital expenditure and therefore would have been unfeasible for this study.

Finally, it would have been both valuable and interesting to gather more information about the participating consultants. Such information could have included beliefs about what they would consider appropriate levels of patient participation, their psychosocial beliefs, and a measure of patient-centeredness.

### 8.12. Directions for future research

The data collected for this study provides scope for further research. There are numerous other ways that the process data in particular could be looked at, in order to investigate the doctor-patient interactions in greater depth. For example, a further exploration of the factors that led to the differences in patient participation and satisfaction due to which consultant had been seen could be achieved by examining the VRM role dimensions (Stiles 1992). Other methods of interaction analysis could be applied to the process data, for example the Roter's Interaction Analysis System (RIAS) (Roter, 1991), which is a modification of the Bales' Interaction Process Analysis (1950). This has an advantage of the VRM system in that coding is done from the audiotapes rather than the transcripts making assessment of the tonal qualities of the interaction possible, as it is the tonal qualities that convey the emotional context of the consultation (Roter & Hall 1989). This would be the preferred method but there are other options, for example, the consultations could be analysed in terms of Mishler (1984), who drew on Habermas's theory of Communicative Action and applied it to medical encounters. This system describes the communication that occurs in terms of 'the voice of medicine', and 'the voice of lifeworld'. This method was applied by Barry et al., (2001), who identified four communication patterns between doctor and patients that had a direct influence on patient outcomes.

The experimental video should also be tested in a more realistic (less experimental) manner. This would permit the video to be watched in the setting it was intended for, where the viewers would be subjected to all the distractions that occur in the waiting room. Additionally, if the video is run without the questionnaires, but with the audiotaping, the potential impact on process measures could still be evaluated. As all the doctors in this study were at the consultant level, another advantage of re-testing the experimental video would be that the influence of more junior doctors could be assessed.

The results of the between group analysis of the process measures found that there was a non-significant effect of the intervention on patients participation in terms of Questions, Disclosures, Reflections, length of consultation and the number of patient utterances. These marginal increases in the process measures suggest that the experimental video does have an effect on patients' verbal behaviours. A potential way of overcoming the problems associated with immediate pre-appointment interventions would be to send out a preparatory intervention leaflet/booklet at the same time as the appointment is determined, that prepares patients for their appointment in a similar way as the experimental video. By doing this the experimental video would act as a secondary reinforcement as it would not introducing any new ideas, but would remind the patients of information they have already received. This would also be an inexpensive method of extending the intervention. A similar conclusion was reached by the authors of a written intervention presented in a booklet form 2-3 days prior to the consultation (Cegala et al., 2000), suggesting that a combination of the booklet with a brief follow-up video (e.g. played continuously in the waiting room) might provide a cost-effective means of patient communication skills training.

In the current study, the consultants were blind to the purpose of the study, so that the effects of the intervention could be examined in isolation, but this denied the consultants of the possibility of actively participating to achieve the aims of the intervention. This needs to be addressed particularly in light of the regression analyses that found the doctors as the most influential predictors of patients' verbal participation and satisfaction over and above the contribution made by individual patient differences. This result coupled with the finding that experimental group patients of one of the doctors led to greater patient satisfaction suggests that future interventions should be simultaneously directed towards the doctors as well as the patients to ensure that both parties were working towards achieving the same aims. This strategy has recently been shown to be successful (Brown et al., 2001). Once more specific aspects of the verbal interaction that lead to greater patient participation and satisfaction have been identified. It would then be feasible to design an appropriate intervention to direct at the doctors. This is possibly the most helpful way forward in improving the doctor-patient relationship in the context of an intervention designed to be delivered to patients in the waiting room.

### 8.13. Update of the literature on intervention studies with patients

Since the systematic literature review of intervention studies with patients was completed, three further studies, which would have meet the criteria for inclusion have been identified (Brown et al., 2001; Cegala, Post & McClure, 2001; Kidd, Marteau, Robinson, Ukoumunne & Tydeman, 2004). Two of these studies used interventions shown to be successful, previously reported on in the systematic review, a question prompt sheet (Brown et al., 1999) and a communication skills training booklet (Cegala, et al., 2000). The first of these studies builds on earlier work by increasing the number of participating doctors, thereby increasing the generalisability of the results. The

doctors were also active participants in the intervention by using the patients question prompt sheet proactively. Question-asking was increased in patients who received the prompt sheet. In the group where the doctor specifically addressed the prompt sheet, patient anxiety was reduced, the duration of the consultation was shorter and patient recall was improved (Brown et al., 2001). The second of these studies tested their intervention on a group of older patients. The training booklet was modified for use with older patients by making it shorter and increasing the font size. The patients also received a face-to-face session just before their consultation, where items in the booklet were discussed and added to if necessary. Patients were also helped to organise their approach to the consultation. The results showed that the trained patients were able to elicit more information from their doctor and that trained patients acquired more information for each question asked (Cegala et al., 2001). The third study was designed to assess the efficacy of three interventions to promote patient question-asking in consultations (Kidd et al., 2004). Patients were randomly assigned to one of three intervention groups. In the first patients were given a written message, signed by the doctor, encouraging question-asking. The second was a five-minute face-to-face intervention, where patients were helped to formulate at least three questions they wanted to ask the doctor. The third intervention was the same as the second but additionally the patients were encouraged to rehearse the questions aloud. The results from this study found that while the interventions did not increase patient question-asking behaviours compared to the control groups there were other benefits. Immediately post-consultation the intervention group patients reported greater self-efficacy in question-asking and three months post-consultation intervention patients were more satisfied although satisfaction was similar between the intervention and control groups immediately post-consultation (Kidd et al., 2004). These studies lend support to the argument that the more intensive interventions with patients may be

necessary and that directing interventions at both patients and doctors appears to be successful.

### 8.14. Summary

This study did not find conclusive evidence that targeting a large and diverse group of patients with the video intervention was effective in increasing patient participation, satisfaction or any other of the outcome measures. Certain individual patient characteristics were shown to predict both patient participation and satisfaction. Differences between the doctors were also shown to have a marked effect on both process and outcomes of the consultation. The doctors were found to be significant predictors of both patient participation and satisfaction. A significant interaction was found between doctor and time (pre- and post-consultation) on state anxiety. One of the most interesting findings was the significant interaction between the doctor and experimental group on the measure of patient satisfaction, suggesting that the impact of the video depended on the consultation style of the doctor seen.

### 8.15. Conclusions

The three principal aims of this study have been accomplished. The efficacy of the video intervention was examined, along with patients' responses to the video intervention and the effect of the doctors on the process of communication, outcome of the consultation and the intervention. This study has systematically examined the effects of a video intervention to increase patient participation by building on past research, exploring aspects of interventions with patients hitherto not considered and by overcoming many of the methodological flaws found in the literature.

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# APPENDIX 1 – PATIENT INVITATION

Date:

Dear

Enclosed is an information sheet about a study being carried out at the clinic you are soon to attend. The ultimate aim of the study is to improve the services patients receive, as you are a new patient your participation would be greatly appreciated. However, your decision regarding this will in no way affect your treatment, and of course you can withdraw from the study at any time for whatever reason.

If you are willing to take part, could you please come to the cardiology department at your revised appointment time (stated on the enclosed form) and ask for Jane Harrington (researcher). As you will be arriving sometime before your scheduled appointment, we will do our best to reduce your waiting time in the clinic. If you have any questions or concerns regarding this study, please feel free to ring Jane on:

. . .

It would be most helpful if you could return the enclosed consent form advising us of your decision, as soon as possible. Please use the stamped-addressed envelope provided.

Yours sincerely

Dr XXXX

# APPENDIX 2 – PATIENT INFORMATION SHEET

# PATIENT INFORMATION SHEET

## COMMUNICATION BETWEEN DOCTORS AND PATIENTS

Aims and objectives

The purpose of this research is to improve the services provided at this clinic for patients. To do this, the study will assess various aspects of your health, the communication that takes place during your consultation, and your satisfaction with your care at the clinic. The doctors and other staff at the clinic are in full support of this study.

What the study involves

- You are requested to arrive at the clinic 30 minutes before your appointment.
- During this time, you will fill out a number of questionnaires and may watch a short video (provided there is sufficient time before your appointment).
- The consultation with the doctor takes place and is tape-recorded.
- Directly after seeing the doctor, you will fill out the remainder of the questionnaires. This should only take a few minutes.
- Finally, 4-6 weeks after seeing the doctor you will be telephoned by the researcher who will ask you a few questions about any treatment your consultant prescribed.

**All information provided is confidential and will only be used for research purposes. None of the information given will be passed on to your doctor.**

You do not have to take part in this study if you do not want to. If you decide to take part you may withdraw at any time without having to give reason. Your decision whether to take part or not will not will not affect your care and management in any way.

If you have any further questions about the study please contact:
Jane Harrington
University College London Medical School
Unit of Health Psychology

All proposals for research using human subjects are reviewed by an ethics committee before they can proceed. This proposal was reviewed by the local hospital ethics committee.

# APPENDIX 3 – CONSENT FORM

**CONFIDENTIAL**
**Consent Form**

**Communication between doctors and patients**

Dr L Noble, J Harrington, and Professor S Newman.

If you would like to take part in this study could you please complete and sign this form and return it in the stamped addressed envelope provided as soon as possible. Thank you.

Delete as necessary

1 Have you read the information sheet? YES/NO

2 Do you understand that you are free to withdraw from this study

- at any time
- without giving a reason for withdrawing
- without affecting your future medical care? YES/NO

When you arrive at the clinic you will be given the opportunity to ask any questions you may have and discuss the study in greater detail before taking part.

Signed .....

Date.....

Name in Block Letters.....

# APPENDIX 4 – EXPERIMENTAL VIDEO SCRIPT

## MAKING THE MOST OF YOUR APPOINTMENT

Introduction

**Presenter:** Sometimes people find that after they have been for an appointment at an outpatients department such as this one, they leave with the feeling that they didn't say everything that they wanted to or somehow didn't ask all the right questions. Sometimes people leave feeling uncertain of what the doctor has said, either about what is wrong with them or what the treatment is.

The aim of this video is to show you some ways of making sure that both you and your doctor can make the most out of your appointment.

Before going to see the doctor, it is very important to think about what it is you want. Do you want information? Do you want reassurance? A better understanding of your illness? Or maybe to discuss the medication you are taking.

Your doctor cannot read your mind and is depending on you to say what is worrying you. There is no need to be afraid to ask questions or worry about taking up the doctor's time. It is important that when you leave you are satisfied with what has been decided.

**SAY WHAT YOUR WORRIES ARE** (Heading on screen)

**Presenter:** The first thing is to make sure that if you have any worries or concerns that you tell the doctor what these are.

Scenario 1 – Part 1

**Doctor:** So, you have been getting these headaches about once every ten days over the last three months.

**Patient:** Yes I have.

**Doctor:** Have you always suffered from headaches?

**Patient:** Yes, I only used to get them occasionally, but I'm getting them much more often now.

**Doctor:** Whereabouts do you feel the pain?

**Patient:** In the front, right behind my eyes

**Doctor:** Have you had any visual disturbances?

**Patient:** Yes, usually a bit before the headache starts I see flashing lights and everything I can see becomes fuzzy and distorted, then I feel really sick.

**Patient:** It's just that they seem to be getting much worse and I'm worried that there is something really wrong with me. I think I might have a brain tumour or something.

**Doctor:** It is very unlikely that you have a brain tumour, given what you have already told me. I suspect that these headaches are actually migraines, but I need to ask you some more questions and examine you before I can confirm this diagnosis.

Scenario 1 – Part 2

**Doctor:** So, I can confirm that what you have been suffering from are migraines and not anything more serious.

**Patient:** But they've been happening so often lately. I've had to take a lot of time off work, and I'm worried I might lose my job.

**Doctor:** Well, I can give you some medication to relieve the symptoms so you shouldn't have to take so much time off work.

**Presenter:** It is important to express all your concerns, as the doctor can't reassure you unless you've given the full picture of how the problem has been affecting you.

**ASK QUESTIONS** (Heading on screen)

**Presenter:** Many people find it difficult to ask the doctor questions or they forget until they've left the room. When you see the doctor, think about what you want to know. If the doctor doesn't cover everything that is important to you, don't be afraid to ask.

Scenario 2 – Part 1

**Doctor:** Your doctor has referred you to me as she thinks you may be suffering from a condition called ulcerative colitis.

**Patient:** Yes that's right.

**Doctor:** You will need to undergo some tests. First we will take some blood tests, which can be done in the haematology department here, and then I want you to go for a colonoscopy. We will send you a separate appointment for that.

**Patient:** What is a colonoscopy?

**Doctor:** It's an examination of the entire colon with a viewing instrument. Let me show you the procedure on this diagram.

Scenario 2 – Part 2

**Doctor:** Well Mr. Brown, the results of the tests confirms that you have ulcerative colitis. Our next task is to decide on the most appropriate treatment.

**Patient:** Can you tell me what causes it? Have I caught it from somewhere?

**Doctor:** We don't actually know what causes it, but it is similar to other inflammatory bowel diseases in that the condition flares up every so often.

**Patient:** Will it get eventually get better?

**Doctor:** It is unlikely to disappear altogether but the symptoms can be very effectively controlled using a combination of medications to reduce the inflammation.

**Patient:** Would I have to have an operation in the future?

**Doctor:** We certainly wouldn't be thinking along those lines at this time. The first thing is to get the condition under control using the medication. Some people do require an operation but this is only if the condition has been very severe over many years.

**Presenter:** Sometimes it may be necessary for your doctor to arrange for further tests. If you have any questions about what the tests involve or what you have to do, you must ask.

**MAKE SURE YOU UNDERSTAND** (Heading on screen)

**Presenter:** Thirdly, make sure you understand what the doctor has said.

Scenario 3 – Part 1

**Friend:** So what did the doctor say?

**Patient:** He said I've got arthritis, he mentioned two different types of arthritis, but I can't remember which type he said I had.

**Friend:** Did he give you any medicine?

**Patient:** Yes, he gave me some painkillers and these other tablets.

**Friend:** What are the other pills for?

**Patient:** He did say but I can't remember.

**Presenter:** This can be avoided if you clarify what the doctor is saying at the time.

Scenario 3 – Part 2

**Patient:** So it's the pain and stiffness in my joints that make you think I have arthritis.

**Doctor:** Yes. There are two types of arthritis, the tests we did indicate that you have osteoarthritis, rather than rheumatoid arthritis. To start with, I'll prescribe some analgesics, which will help to control the pain. These tablets you will need to take three times a day. I will also prescribe some anti-inflammatory drugs that will help to control the inflammation and swelling of the joints. These need to be taken twice a day, first thing in the morning and another early afternoon. However, it is very important that you keep the joints mobile in order to reduce stiffness.

**Patient:** Could we run through that again? Which type of arthritis do I have?

**Doctor:** You have osteoarthritis, which is common in people as they get older. It's caused by wear and tear on the joints.

**Patient:** I understand about the painkillers, but what was the other drug you mentioned?

**Doctor:** Anti-inflammatory drugs are very effective at reducing inflammation and swelling of the joints and will help to relieve the stiffness as well.

**Patient:** You also said something about keeping the joints mobile. Surely when I am in pain it is better to keep as still as possible?

**Doctor:** There is a tendency to do this, but in fact, you will help prevent stiffness if you keep the joints mobile. Gentle exercise can help and swimming is particularly good, as it doesn't put too much strain on the joints.

**REMIND YOURSELF** (Heading on screen)

**Presenter**: Finally, at the end of your appointment it is useful to remind yourself of all the information given to you, to avoid any confusion later.

Scenario 4

**Doctor:** In order to control your diabetes we will need to give you some oral hypoglycaemic medication to keep your blood sugar levels within the normal range. You also have to change your eating habits. You really have to avoid eating or drinking sugar or glucose and don't use sugar in your cooking. Avoid jam, marmalade, honey, sweets, chocolate, cakes, biscuits, tinned fruit, and avoid fizzy drinks and squashes unless they are sugar-free. You can use artificial sweeteners such as saccharin in tea and coffee. Apart from these foods you can eat and drink anything else just as you did before you were diabetic.

**Patient:** That was a bit complicated. Is it OK if I just go through what you have told me about foods that I must avoid?

**Doctor:** Yes of course.

**Patient:** Right! So I shouldn't have sugar or put sugar in my cooking. No jam, etc, chocolate, cakes or biscuits. But I can use artificial sweeteners in tea and coffee. Is that it?

**Doctor:** Don't forget. No fizzy drinks or squashes unless they are low-calorie or sugar-free.

**Patient:** OK. I think I've got that now.

**Doctor:** Do you have any questions?

**Patient:** No, I don't think so.

**Doctor:** Good, well I'll see you in three months and see how you are doing.

**Patient:** Oh, but can I still drink alcohol?

**Doctor:** Yes, provided you drink sensibly. I'll give you this leaflet which explains everything in detail.

Conclusion

**Presenter:** There is a lot that you can do to make the most out of your appointment so don't forget to:

Tell the doctor what you are worried about.

Ask questions that are important to you.

Make sure that you understand what the doctor has said.

Remind yourself of what the doctor has said.

**Presenter:** Whilst you are waiting, you might want to think about what you would like from your appointment with your doctor today.

# APPENDIX 5 – PRE-CONSULTATION MEASURES

No. _____

# CONFIDENTIAL

# DOCTOR-PATIENT COMMUNICATION STUDY

## (CARDIOLOGY OUTPATIENTS DEPARTMENT)

**Pre-consultation measures**

# DEMOGRAPHIC QUESTIONNAIRE

CONSULTANT: _____ PATIENT ID. NO: _____

TODAY'S DATE: DAY/ MONTH / YEAR ____ / ____ / ____

NAME: _____

DATE OF BIRTH: DAY/ MONTH / YEAR ____ / ____ / ____

SEX: MALE/FEMALE

MARITAL STATUS: (Please circle)
SINGLE MARRIED
LIVING WITH PARTNER SEPARATED
DIVORCED WIDOWED

ETHNIC ORIGIN: (Please circle)
BLACK (African) BLACK (Afro-Caribbean)
ASIAN (Indian) ASIAN (African)
ORIENTAL WHITE (UK)
WHITE (European) WHITE (other)
OTHER (please specify: _____)

1st LANGUAGE IF NOT ENGLISH: _____

NUMBER OF YEARS IN FULL TIME EDUCATION: _____
(Starting from age 5 approx.)

OCCUPATION: _____
(Or usual profession if currently not working)

## Self-evaluation questionnaire (Y-6 item)

| | | Not at all | Somewhat | Moderately | Very much |
|---|---|---|---|---|---|
| 1. | I feel calm | 1 | 2 | 3 | 4 |
| 2. | I am tense | 1 | 2 | 3 | 4 |
| 3. | I feel upset | 1 | 2 | 3 | 4 |
| 4. | I am relaxed | 1 | 2 | 3 | 4 |
| 5. | I feel content | 1 | 2 | 3 | 4 |
| 6. | I am worried | 1 | 2 | 3 | 4 |

Please make sure that you have answered all the questions.

## Health locus of control

This is a questionnaire designed to determine the way in which different people view certain important health-related issues. Each item is a belief statement with which you may rate from strongly agree through to strongly disagree. Please circle the response that most closely matches your view. This is a measure of your personal beliefs: obviously there are no right or wrong answers.

Please answer all these items carefully, but do not spent too much time on any one item. When making your choice, do not be influenced by your previous choices. It is important that you respond according to your actual beliefs and not according to how you feel you should believe or how you think we want you to believe.

1. If I get sick, it is my own behaviour which determines how soon I get well again.

Strongly Agree | Agree | Slightly Agree | Slightly Disagree | Disagree | Strongly Disagree

2. No matter what I do, if I am going to become ill, I am going to become ill.

Strongly Agree | Agree | Slightly Agree | Slightly Disagree | Disagree | Strongly Disagree

3. Having regular contact with my doctor is the best way for me to avoid illness.

| Strongly Agree | Agree | Slightly Agree | Slightly Disagree | Disagree | Strongly Disagree |
|---|---|---|---|---|---|

4. Most things that affect my health happen to me by accident.

| Strongly Agree | Agree | Slightly Agree | Slightly Disagree | Disagree | Strongly Disagree |
|---|---|---|---|---|---|

5. Whenever I don't feel well I should consult a medically trained professional.

| Strongly Agree | Agree | Slightly Agree | Slightly Disagree | Disagree | Strongly Disagree |
|---|---|---|---|---|---|

6. I am in control of my health.

| Strongly Agree | Agree | Slightly Agree | Slightly Disagree | Disagree | Strongly Disagree |
|---|---|---|---|---|---|

7. My family has a lot to do with my becoming sick or staying healthy.

| Strongly Agree | Agree | Slightly Agree | Slightly Disagree | Disagree | Strongly Disagree |
|---|---|---|---|---|---|

8. When I get sick I am to blame.

| Strongly Agree | Agree | Slightly Agree | Slightly Disagree | Disagree | Strongly Disagree |
|---|---|---|---|---|---|

9. Luck plays a big part in determining how soon I will recover from an illness.

| Strongly Agree | Agree | Slightly Agree | Slightly Disagree | Disagree | Strongly Disagree |
|---|---|---|---|---|---|

10. Health professionals control my health.

| Strongly Agree | Agree | Slightly Agree | Slightly Disagree | Disagree | Strongly Disagree |
|---|---|---|---|---|---|

11. My good health is largely a matter of fortune.

| Strongly Agree | Agree | Slightly Agree | Slightly Disagree | Disagree | Strongly Disagree |
|---|---|---|---|---|---|

12. The main thing which affects my health is what I do myself.

| Strongly Agree | Agree | Slightly Agree | Slightly Disagree | Disagree | Strongly Disagree |
|---|---|---|---|---|---|

13. If I take good care of myself I can avoid illness.

| Strongly Agree | Agree | Slightly Agree | Slightly Disagree | Disagree | Strongly Disagree |
|---|---|---|---|---|---|

14. When I recover from an illness it is usually because other people (e.g.. doctors, nurses, friends, family) have been taking good care of me.

| Strongly Agree | Agree | Slightly Agree | Slightly Disagree | Disagree | Strongly Disagree |
|---|---|---|---|---|---|

15. No matter what I do I am likely to become ill.

| Strongly Agree | Agree | Slightly Agree | Slightly Disagree | Disagree | Strongly Disagree |
|---|---|---|---|---|---|

16. If it is meant I will stay healthy.

| Strongly Agree | Agree | Slightly Agree | Slightly Disagree | Disagree | Strongly Disagree |
|---|---|---|---|---|---|

17. If I take the right actions I will stay healthy.

| Strongly Agree | Agree | Slightly Agree | Slightly Disagree | Disagree | Strongly Disagree |
|---|---|---|---|---|---|

18. Regarding my health I can only do what my doctor tells me to do.

| Strongly Agree | Agree | Slightly Agree | Slightly Disagree | Disagree | Strongly Disagree |
|---|---|---|---|---|---|

## HEALTH SURVEY QUESTIONNAIRE (SF36)

The following questions ask for your views about your health, how you feel and how well you are able to do your usual activities. If you are unsure of how to answer any questions, please give the best answer you can and make any of your own comments if you like.

1. In general would you say your health is:

1. Excellent 2. Very good 3.Good 4. Fair 5.Poor

---

2. **Compared to one year ago**, how would you rate your health in general **now**?

1. Much better now than one year ago
2. Somewhat better now than one year ago
3. About the same as one year ago
4. Somewhat worse now than one year ago
5. Much worse now than one year ago

---

3. The following questions are about activities you might do during a typical day. Does your health limit you in these activities? If so, how much? *(Circle 1, 2, or 3 on each line)*

| | | Yes, limited a lot | Yes, limited a little | No, not limited at all |
|---|---|---|---|---|
| A | **Vigorous activities**, such as running, lifting heavy objects, participating in strenuous sports. | 1 | 2 | 3 |
| B | **Moderate activities**, such as moving a table, pushing a vacuum cleaner, bowling or playing golf. | 1 | 2 | 3 |
| C | Lifting or carrying groceries. | 1 | 2 | 3 |
| D | Climbing **several** flights of stairs. | 1 | 2 | 3 |
| E | Climbing **one** flight of stairs. | 1 | 2 | 3 |
| F | Bending, kneeling or stooping. | 1 | 2 | 3 |
| G | Walking **more than a mile.** | 1 | 2 | 3 |
| H | Walking **half a mile.** | 1 | 2 | 3 |
| I | Walking **one hundred yards.** | 1 | 2 | 3 |
| J | Bathing and dressing yourself. | 1 | 2 | 3 |

4. During the **past 4 weeks,** have you had any of the following problems with your work or other regular daily activities **as a result of your physical health**? (circle one number on each line)

| | | YES | NO |
|---|---|---|---|
| A. | Cut down on the **amount of time** you spent on work or other activities. | 1 | 2 |
| B. | **Accomplished less** than you would like. | 1 | 2 |
| C. | Were limited in the **kind** of work and other activities. | 1 | 2 |
| D. | Had difficulty in performing the work or other activities. (e.g. it took extra effort) | 1 | 2 |

5. During the **past 4 weeks**, have you had any of the following problems with your work or other regular daily activities **as a result of any emotional problems** (such as feeling depressed or anxious)?

| | | YES | NO |
|---|---|---|---|
| A. | Cut down on the **amount of time** you spent on work or other activities. | 1 | 2 |
| B. | **Accomplished less** than you would like. | 1 | 2 |
| C. | Didn't do work or activities as **carefully** as usual. | 1 | 2 |

6. During the **past 4 weeks**, to what extent has your physical health or emotional problems interfered with your normal social activities with family, friends, neighbours or groups?

1. Not at all 2. Slightly 3. Moderately 4. Quite a bit 5. Extremely

---

7. How much **bodily** pain have you had during **the past 4 weeks.**

1. None 2. Very mild 3. Mild 4. Moderate 5. Severe 6.Very severe

---

8. During the **past 4 weeks**, how much did **pain** interfere with your normal work (including work both outside the home and housework)?

1. Not at all 2. A little bit 3. Moderately 4. Quite a bit 5. Extremely

---

9. These questions are about how you feel and things have been with you **during the past month**. For each question, please indicate the one answer that comes the closest to the way you have been feeling.
How much time during the **past four weeks**.....

| | | All of the time | Most of the time | A good bit of the time | Some of the time | A little of the time | None of the time |
|---|---|---|---|---|---|---|---|
| A | Did you feel full of life? | 1 | 2 | 3 | 4 | 5 | 6 |
| B | Have you been a very nervous person? | 1 | 2 | 3 | 4 | 5 | 6 |
| C | Have you felt so down the dumps that nothing could cheer you up? | 1 | 2 | 3 | 4 | 5 | 6 |
| D | Have you ever felt calm and peaceful? | 1 | 2 | 3 | 4 | 5 | 6 |
| E | Did you have a lot of energy? | 1 | 2 | 3 | 4 | 5 | 6 |
| F | Have you felt downhearted and low? | 1 | 2 | 3 | 4 | 5 | 6 |
| G | Did you feel worn out? | 1 | 2 | 3 | 4 | 5 | 6 |
| H | Have you been a happy person? | 1 | 2 | 3 | 4 | 5 | 6 |
| I | Did you feel tired? | 1 | 2 | 3 | 4 | 5 | 6 |
| J | Has your **health limited your social activities** (like visiting friends or close relatives)? | 1 | 2 | 3 | 4 | 5 | 6 |

10. How TRUE or FALSE each of the following statements is of you?

| | | Definitely true | Mostly true | Not sure | Mostly false | Definitely false |
|---|---|---|---|---|---|---|
| A. | I seem to get ill more easily than other people. | 1 | 2 | 3 | 4 | 5 |
| B. | I am as healthy as anybody I know. | 1 | 2 | 3 | 4 | 5 |
| C. | I expect my health to get worse. | 1 | 2 | 3 | 4 | 5 |
| D. | My health is excellent. | 1 | 2 | 3 | 4 | 5 |

## HEALTH OPINION SURVEY

The following questions ask you for your opinions about different kinds of health care. For each statement below, decide whether you **agree** or **disagree** and circle the answer that **best** fits your opinion. Each person is different, so there are no 'right' or 'wrong' answers. Please try to circle an answer for each question, and don't leave any blank. Even if you find you don't entirely agree or disagree with a statement, choose the **one** answer that comes **closest** to what you believe.

Your answers are confidential and will only be used for research purposes only. Thank you for your assistance.

| | | For each question, circle only one answer that comes CLOSEST to what you believe. | |
|---|---|---|---|
| 1. | I usually don't ask the doctor or nurse many questions about what they're doing during a medical examination. | AGREE | DISAGREE |
| 2. | Except for serious illness, it's generally better to take care of your **own** health than to seek professional help. | AGREE | DISAGREE |
| 3. | I'd rather have doctors and nurses make the decisions about what's best than for them to give me a whole lot of choices. | AGREE | DISAGREE |
| 4. | Instead of waiting for them to tell me, I usually ask the doctor or nurse immediately after an examination about my health. | AGREE | DISAGREE |
| 5. | It is better to rely on the judgements of doctors (who are experts) than to rely on 'common sense' in taking care of your own body. | AGREE | DISAGREE |
| 6. | Clinics and hospitals are good places to go for help since **it's best for medical experts to take responsibility** for health care. | AGREE | DISAGREE |
| 7. | Learning how to cure some of your illness without contacting a physician is a good idea. | AGREE | DISAGREE |
| 8. | I usually ask the doctor or nurse lots of questions about the procedures during a medical examination. | AGREE | DISAGREE |

| | | | |
|---|---|---|---|
| 9. | It's almost always better to seek professional help than try to treat yourself. | AGREE | DISAGREE |
| 10. | It is better to trust the doctor or nurse in charge of a medical procedure than to question what they are doing. | AGREE | DISAGREE |
| 11. | Learning how to cure some of your illness without contacting a physician may create more harm than good. | AGREE | DISAGREE |
| 12. | Recovery is usually quicker under the care of a doctor or nurse than when the patients take care of **themselves**. | AGREE | DISAGREE |
| 13. | If it costs the same, I'd rather have a doctor or nurse give me treatments than do the same treatments myself. | AGREE | DISAGREE |
| 14. | It is better to rely less on physicians and more on your own common sense when it comes to caring for your body. | AGREE | DISAGREE |
| 15. | I usually wait for the doctor or nurse to tell me about the results of a medical examination rather than asking them immediately. | AGREE | DISAGREE |
| 16. | I'd rather be given many choices about what's best for my health than to have the doctor make the decisions for me. | AGREE | DISAGREE |

## RAS (Shortened)

Please indicate how characteristic each of the following statements is of you by circling one of the six options below each statement.

1. I am careful to avoid hurting other people's feelings, even when I feel that I have been injured.

| very characteristic | rather characteristic | somewhat characteristic | somewhat uncharacteristic | rather uncharacteristic | very uncharacteristic |
|---|---|---|---|---|---|

2. When I am asked to do something, I insist on knowing why.

| very characteristic | rather characteristic | somewhat characteristic | somewhat uncharacteristic | rather uncharacteristic | very uncharacteristic |
|---|---|---|---|---|---|

3. I will hesitate to make phone calls to business establishments and institutions.

| very characteristic | rather characteristic | somewhat characteristic | somewhat uncharacteristic | rather uncharacteristic | very uncharacteristic |
|---|---|---|---|---|---|

4. I find it embarrassing to return merchandise.

| very characteristic | rather characteristic | somewhat characteristic | somewhat uncharacteristic | rather uncharacteristic | very uncharacteristic |
|---|---|---|---|---|---|

5. I have avoided asking questions for fear of sounding stupid.

| very characteristic | rather characteristic | somewhat characteristic | somewhat uncharacteristic | rather uncharacteristic | very uncharacteristic |
|---|---|---|---|---|---|

6. I often have a hard time saying "No".

| very characteristic | rather characteristic | somewhat characteristic | somewhat uncharacteristic | rather uncharacteristic | very uncharacteristic |
|---|---|---|---|---|---|

7. I complain about poor service in a restaurant and elsewhere.

| very characteristic | rather characteristic | somewhat characteristic | somewhat uncharacteristic | rather uncharacteristic | very uncharacteristic |
|---|---|---|---|---|---|

8. Anyone attempting to push ahead of me is in a line for a good battle.

| very characteristic | rather characteristic | somewhat characteristic | somewhat uncharacteristic | rather uncharacteristic | very uncharacteristic |
|---|---|---|---|---|---|

9. I am quick to express an opinion.

| very characteristic | rather characteristic | somewhat characteristic | somewhat uncharacteristic | rather uncharacteristic | very uncharacteristic |
|---|---|---|---|---|---|

10. There are times when I just can't say anything.

| very characteristic | rather characteristic | somewhat characteristic | somewhat uncharacteristic | rather uncharacteristic | very uncharacteristic |
|---|---|---|---|---|---|

# APPENDIX 6 – POST-CONSULTATION QUESTIONNAIRES

No. _____

# CONFIDENTIAL

# DOCTOR-PATIENT COMMUNICATION STUDY
## (CARDIOLOGY OUTPATIENTS DEPARTMENT)

### Post-consultation measures

## Medical Interview Satisfaction Scale (MISS)

Below are a list of statements concerned with your view of the consultation today. For each item please circle the number that represents the extent to which you agree or disagree with the statement.

You may find that some statements are not totally appropriate to your circumstance, but please answer all items as best you can.

The answers to these questions will NOT be given to your doctor so you can be as honest as possible without causing offence.

1. The doctor gave a poor explanation of my illness.

| Very strongly agree | Strongly agree | Agree | Neutral | Disagree | Strongly disagree | Very strongly disagree |
|---|---|---|---|---|---|---|

2. The doctor told me just what my illness is.

| Very strongly agree | Strongly agree | Agree | Neutral | Disagree | Strongly disagree | Very strongly disagree |
|---|---|---|---|---|---|---|

3. After talking with the doctor, I know just how serious my illness is.

| Very strongly agree | Strongly agree | Agree | Neutral | Disagree | Strongly disagree | Very strongly disagree |
|---|---|---|---|---|---|---|

4. The doctor told me all I wanted to know about my illness.

| Very strongly agree | Strongly agree | Agree | Neutral | Disagree | Strongly disagree | Very strongly disagree |
|---|---|---|---|---|---|---|

5. I am not really certain how to follow the doctor's advice.

| Very strongly agree | Strongly agree | Agree | Neutral | Disagree | Strongly disagree | Very strongly disagree |
|---|---|---|---|---|---|---|

6. After talking with the doctor, I have a good idea of how long it will be before I am well again.

| Very strongly agree | Strongly agree | Agree | Neutral | Disagree | Strongly disagree | Very strongly disagree |
|---|---|---|---|---|---|---|

7. The doctor seemed interested in me as a person.

| Very strongly agree | Strongly agree | Agree | Neutral | Disagree | Strongly disagree | Very strongly disagree |
|---|---|---|---|---|---|---|

8. The doctor seemed warm and friendly to me.

| Very strongly agree | Strongly agree | Agree | Neutral | Disagree | Strongly disagree | Very strongly disagree |
|---|---|---|---|---|---|---|

9. I felt that this doctor did not treat me as an equal.

| Very strongly agree | Strongly agree | Agree | Neutral | Disagree | Strongly disagree | Very strongly disagree |
|---|---|---|---|---|---|---|

10. The doctor seemed to take my problems seriously.

| Very strongly agree | Strongly agree | Agree | Neutral | Disagree | Strongly disagree | Very strongly disagree |
|---|---|---|---|---|---|---|

11. I felt embarrassed while talking with the doctor.

| Very strongly agree | Strongly agree | Agree | Neutral | Disagree | Strongly disagree | Very strongly disagree |
|---|---|---|---|---|---|---|

12. I felt free to talk to this doctor about private matters.

| Very strongly agree | Strongly agree | Agree | Neutral | Disagree | Strongly disagree | Very strongly disagree |
|---|---|---|---|---|---|---|

13. The doctor gave me a chance to say what was really on my mind.

| Very strongly agree | Strongly agree | Agree | Neutral | Disagree | Strongly disagree | Very strongly disagree |
|---|---|---|---|---|---|---|

14. I really felt understood by my doctor.

| Very strongly agree | Strongly agree | Agree | Neutral | Disagree | Strongly disagree | Very strongly disagree |
|---|---|---|---|---|---|---|

15. The doctor did not allow me to say everything I had wanted about my problems.

| Very strongly agree | Strongly agree | Agree | Neutral | Disagree | Strongly disagree | Very strongly disagree |
|---|---|---|---|---|---|---|

16. The doctor did not really understand my main reason for coming.

| Very strongly agree | Strongly agree | Agree | Neutral | Disagree | Strongly disagree | Very strongly disagree |
|---|---|---|---|---|---|---|

17. This is a doctor I would trust with my life.

| Very strongly agree | Strongly agree | Agree | Neutral | Disagree | Strongly disagree | Very strongly disagree |
|---|---|---|---|---|---|---|

18. I would hesitate to recommend this doctor to my friends.

| Very strongly agree | Strongly agree | Agree | Neutral | Disagree | Strongly disagree | Very strongly disagree |
|---|---|---|---|---|---|---|

19. The doctor seemed to know what (s)he was doing.

| Very strongly agree | Strongly agree | Agree | Neutral | Disagree | Strongly disagree | Very strongly disagree |
|---|---|---|---|---|---|---|

20. After talking with the doctor, I feel much better about my problems.

| Very strongly agree | Strongly agree | Agree | Neutral | Disagree | Strongly disagree | Very strongly disagree |
|---|---|---|---|---|---|---|

21. The doctor has relieved my worries about my illness.

| Very strongly agree | Strongly agree | Agree | Neutral | Disagree | Strongly disagree | Very strongly disagree |
|---|---|---|---|---|---|---|

22. Talking with the doctor has not at all helped my worries about my illness.

| Very strongly agree | Strongly agree | Agree | Neutral | Disagree | Strongly disagree | Very strongly disagree |
|---|---|---|---|---|---|---|

23. The doctor has come up with a good plan for helping me.

| Very strongly agree | Strongly agree | Agree | Neutral | Disagree | Strongly disagree | Very strongly disagree |
|---|---|---|---|---|---|---|

24. This doctor's visit has not at all helped me.

| Very strongly agree | Strongly agree | Agree | Neutral | Disagree | Strongly disagree | Very strongly disagree |
|---|---|---|---|---|---|---|

25. The doctor seemed to know just what to do for my problem.

| Very strongly agree | Strongly agree | Agree | Neutral | Disagree | Strongly disagree | Very strongly disagree |
|---|---|---|---|---|---|---|

26. I expect that it will be easy for me to follow the doctor's advice.

| Very strongly agree | Strongly agree | Agree | Neutral | Disagree | Strongly disagree | Very strongly disagree |
|---|---|---|---|---|---|---|

27. I intend to follow the doctor's instructions.

| Very strongly agree | Strongly agree | Agree | Neutral | Disagree | Strongly disagree | Very strongly disagree |
|---|---|---|---|---|---|---|

28. It may be difficult for me to do exactly what the doctor told me to do.

| Very strongly agree | Strongly agree | Agree | Neutral | Disagree | Strongly disagree | Very strongly disagree |
|---|---|---|---|---|---|---|

29. I am not sure the doctor's treatment will be worth the trouble it will take.

| Very strongly agree | Strongly agree | Agree | Neutral | Disagree | Strongly disagree | Very strongly disagree |
|---|---|---|---|---|---|---|

Please check that you have answered all the questions.

## RECOVERY LOCUS OF CONTROL SCALE

These are statements other people have made about their recovery. Please will you indicate the extent to which you agree or disagree with them on the right-hand columns.

| | Strongly agree | Agree | Uncertain | Disagree | Strongly disagree |
|---|---|---|---|---|---|
| 1. How I manage in the future depends on me, not on what other people can do for me. | | | | | |
| 2. It's often best just to wait and see what happens. | | | | | |
| 3. It's what I do to help myself that's really going to make all the difference. | | | | | |
| 4. My own efforts are not very important, my recovery really depends on others. | | | | | |
| 5. It's up to me to make sure that I make the best recovery possible under the circumstances. | | | | | |
| 6. My own contribution to my recovery doesn't amount to much. | | | | | |
| 7. Getting better now is a matter of my own determination rather than anything else. | | | | | |
| 8. I have little or no control over my progress from now on. | | | | | |
| 9. It doesn't matter how much help you get, in the end it's your own efforts that count. | | | | | |

## Perception of Communication

The following questions are about how you felt you were able relate to the doctor.

| | | Strongly disagree | Disagree | Neither | Agree | Strongly agree |
|---|---|---|---|---|---|---|
| 1. | I felt I understood what the doctor had said. | 1 | 2 | 3 | 4 | 5 |
| 2. | I was able to ask questions that were important to me. | 1 | 2 | 3 | 4 | 5 |
| 3. | I was able to express my concerns and feelings. | 1 | 2 | 3 | 4 | 5 |
| 4. | I was able to go over any points again if I wanted to. | 1 | 2 | 3 | 4 | 5 |

Self-evaluation questionnaire (Y-6 item)

| | | Not at all | **Somewhat** | Moderately | Very much |
|---|---|---|---|---|---|
| 1. | I feel calm | 1 | 2 | 3 | 4 |
| 2. | I am tense | 1 | 2 | 3 | 4 |
| 3. | I feel upset | 1 | 2 | 3 | 4 |
| 4. | I am relaxed | 1 | 2 | 3 | 4 |
| 5. | I feel content | 1 | 2 | 3 | 4 |
| 6. | I am worried | 1 | 2 | 3 | 4 |

Please make sure that you have answered **all** the questions.

## VIDEO EVALUATION

The following questions are concerned with how much you feel the video you saw prior to your consultation influenced the way in which you communicated with the doctor. Please answer as honestly as you can.

| | | Strongly disagree | Disagree | Neither | Agree | Strongly agree |
|---|---|---|---|---|---|---|
| 1. | I felt the video helped me understand what the doctor said. | 1 | 2 | 3 | 4 | 5 |
| 2. | I felt that the video helped me ask the questions that were important to me. | 1 | 2 | 3 | 4 | 5 |
| 3. | I felt the video helped me express my concerns and feelings. | 1 | 2 | 3 | 4 | 5 |
| 4. | I felt the video helped me to remind myself of what the doctor said. | 1 | 2 | 3 | 4 | 5 |

## Consultation History Checklist

1. Have you ever been referred to an outpatients clinic before your visit to the cardiology clinic?

**YES** **NO**

If YES, how many different outpatients departments have you had appointments at?

Number of times .....

2. Approximately, how many times have you visited your GP in the last year?

Number of times .....

3. Have you spent any time in hospital before?

**YES** **NO**

If YES, on how many different occasions?

Number of times .....

# APPENDIX 7 – FOLLOW-UP QUESTIONNAIRE

ID N0:_____

Communication study follow-up questionnaire

This questionnaire is strictly confidential and is for research purposes only. Your doctor will not have access to this information. *Please circle the appropriate answer.*

| 1. At the time of your appointment did the doctor tell you exactly what your health problem was? | YES | NO |
|---|---|---|

If **YES** was it a: a) Cardiac problem b) Another health problem

What did the doctor say the problem was?

.....
.....
.....

| 2. At the time of your appointment, were you sent for further tests? | YES | NO |
|---|---|---|

| 3. Were you referred back to your GP? | YES | NO |
|---|---|---|

| 4. Did the doctor at the clinic recommend any medications? | YES | NO |
|---|---|---|

If **YES**, what was recommended?

a).....
b).....
c).....

5. For each of these, to what extent have you been able to take the medication?

| | | | | | |
|---|---|---|---|---|---|
| a | Not at all | A little | Some of the time | Mostly | All the time |
| b | Not at all | A little | Some of the time | Mostly | All the time |
| c | Not at all | A little | Some of the time | Mostly | All the time |

| 6. Did the doctor make any other recommendations with regards to your health (exercise, diet, giving up smoking etc.)? | YES | NO |
|---|---|---|

If **YES**, what did the doctor suggest?

a).....
b).....
c).....

7. For each of these, to what extent have you been able to follow the doctor's advice?

| | | | | | |
|---|---|---|---|---|---|
| a | Not at all | A little | Some of the time | Mostly | All the time |
| b | Not at all | A little | Some of the time | Mostly | All the time |
| c | Not at all | A little | Some of the time | Mostly | All the time |

8. Do you think you were given **enough** information at the clinic?

| | | | | |
|---|---|---|---|---|
| Too little | Not quite enough | About right | A little too much | Far too much |

9. To what extent do you feel that you **understood** the information that you received?

| | | | | |
|---|---|---|---|---|
| Not at all | A little | A moderate amount | Mostly | Totally |

10. How **reassured** did you feel about your health problems after your appointment?

| | | | | |
|---|---|---|---|---|
| Not at all reassured | A little reassured | Neutral | Fairly reassured | Totally reassured |

| | | |
|---|---|---|
| 11. Was the outcome of your appointment what you expected? | YES | NO |

If **NO**, what did you expect the outcome to be?

.....
.....
.....
.....

12. During the **past 4 weeks,** have you had any of the following problems with your work or other regular daily activities **as a result of your physical health**?

| | YES | NO |
|---|---|---|
| Cut down on the **amount of time** you spent on work or other activities. | 1 | 2 |
| **Accomplished less** than you would like. | 1 | 2 |
| Were limited in the **kind** of work and other activities. | 1 | 2 |
| Had difficulty in performing the work or other activities (e.g. it took extra effort) | 1 | 2 |

13. How much time during the past four weeks.....

| | All of the time | Most of the time | A good bit of the time | Some of the time | A little of the time | None of the time |
|---|---|---|---|---|---|---|
| Have you been a very nervous person? | 1 | 2 | 3 | 4 | 5 | 6 |
| Have you felt so down the dumps that nothing could cheer you up? | 1 | 2 | 3 | 4 | 5 | 6 |
| Have you felt calm and peaceful? | 1 | 2 | 3 | 4 | 5 | 6 |
| Have you felt downhearted and low? | 1 | 2 | 3 | 4 | 5 | 6 |
| Have you been a happy person? | 1 | 2 | 3 | 4 | 5 | 6 |

**Thank you very much for taking the time to complete this questionnaire**

# APPENDIX 8 – PUBLICATION ARISING FROM THIS RESEARCH

ELSEVIER

Patient Education and Counseling 52 (2004) 7–16

Patient Education and Counseling

www.elsevier.com/locate/pateducou

Review

# Improving patients' communication with doctors: a systematic review of intervention studies

Jane Harrington, Lorraine M. Noble*, Stanton P. Newman


doi:10.1016/S0738-3991(03)00017-X